CANADA MORTGAGE AND HOUSING CORPORATION

QUALITY OF LIFE INDICATORS: A PILOT TEST OF THE COMMUNITY ORIENTED MODEL OF THE LIVED ENVIRONMENT

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QUALITY OF LIFE INDICATORS: A PILOT TEST OF THE COMMUNITY ORIENTED MODEL OF THE LIVED ENVIRONMENT

September 1996

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For the:
Centre for Future Studies in Housing and Living Environments

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PURPOSE

The purpose of this study was to conduct a pilot test of the Community Oriented Model of the Lived Environment (COMLE). Under the direction of Canada Mortgage and Housing Corporation (CMHC), COMLE was developed to assist municipalities to assess and monitor the quality of life in their community. COMLE provides an approach for applying 40 quality of life indicators in municipalities, and makes a direct link between quality of life and urban sustainability. The first version of COMLE was produced in 1992 and successfully tested in 1993 by three Canadian municipalities – Quebec City, Toronto and Fort McMurray. Subsequently, COMLE was used in 1995 for a major study on quality of life in the Greater Toronto Area (GTA). This report presents the results and lessons learned from the 1993 pilot test.

ACKNOWLEDGEMENTS

I would like to acknowledge the enthusiasm and professionalism of the lead staff in each of the participating municipalities: René Morency of the Service de planification du Québec, Lisa Salsberg of Toronto's Healthy City Office, and Doug Parrish of the Planning Department of Fort McMurray. Danielle de Coninck of Vivre à Montréal en santé also deserves thanks. The assistance of CMHC staff Steve Pomeroy, Jill Stacey and Dick Leong was greatly appreciated.

David Sherwood

EXECUTIVE SUMMARY

The purpose of this study was to conduct a pilot test of the Community Oriented Model of the Lived Environment (COMLE). The model was tested in 1993 by the cities of Quebec, Toronto, and Fort McMurray, with additional commentary from Montreal. The results were positive.

This report begins with a brief discussion of quality of life and the need for a practical model of indicators to be used in a public policy context. It then describes the development of the COMLE model and its sub-components, with a reference to an annotated bibliography and a fuller description of the model previously published by CMHC. COMLE is based on the conceptual framework of sustainable development, healthy communities, and ecosystems planning. It is intended to be implemented with existing readily available sources of data in a relatively short time, and to be adapted to local circumstances.

The report then describes the parameters of the pilot test, and summarizes the experiences of the participating municipalities (their full reports are in the appendices). The primary objective of the test was to have practitioners in municipal government evaluate the model under normal working conditions. The test lasted about 13 weeks and required the equivalent of just over one month of staff time. Each city made a unique contribution. Quebec is a medium sized city with a strategic planning background and experience with indicators. Toronto is a large city with a healthy city background and indicators experience. Fort McMurray is a small city with a land use planning background and no previous experience with indicators. Montreal's comments are based on its experience with citizen participation and neighborhood level indicators.

The test confirmed that the structure of COMLE is valid and meaningful for use at the local level. The report recommends improvements to the model, discusses its limitations, and states some conditions for its successful use. Since the model is based on objective indicators, it is necessarily incomplete and should be supplemented with qualitative information. Statistical measures require interpretation to be properly understood, therefore users should provide context and commentary in their reports. Although the model suggests a list of indicators, users are encouraged to adapt it to individual circumstances, which means considering at the outset the nature of local issues and the audience for the resulting report. Very small municipalities may find that while the concept is useful the data are not available. The existing list of indicators and specific measures would benefit from some improvements. Finally, the utility of the exercise is greatly enhanced if a commitment is made to monitor the indicators to establish trends.

Subject to the foregoing precautions, the pilot test municipalities evaluated the model positively. They found that the model is practical, affordable, adaptable, and useful. It promotes an improved understanding of the interrelationships among environment, economy, and society. This report recommends some enhancements to the model, and its dissemination for implementation by municipalities and others.

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CHAPTER 1 - INTRODUCTION

One of the goals of the Canada Mortgage and Housing Corporation (CMHC) is to improve the quality of life of Canadians. There is currently a great deal of interest in quality of life issues in Canada. Within CMHC, the Centre for Future Studies in Housing and Living Environments anticipates and explores trends that will affect housing and its environment, contributing to policy development both domestically and internationally. Given the need to come to grips with quality of life within and outside of CMHC, the Centre for Future Studies wanted to assess the feasibility of developing a practical tool to model it, one which could be used in policy formulation.

Accordingly, the Centre initiated a research process to develop and test a model of quality of life indicators based on healthy sustainable principles that can be widely applied in a practical manner using existing data sources. The model that was developed is known as COMLE, or Community Oriented Model of the Lived Environment. This research report documents a successful pilot test of the model by three cities.

The Need for a Model of Quality of Life Indicators

There is a building awareness of quality of life as a determinant of economic development. As Canada moves to a post-industrial economy that is knowledge and information-based, it is anticipated that economic activity will increasingly be a result of highly skilled labour rather than such traditional factors as raw materials and transportation. Therefore communities will face the challenge of attracting and keeping well educated workers, which is more difficult with the increased mobility engendered by free trade. Under these conditions the quality of life in a community becomes an investment. Indeed, according to a recent article in Public Management, Standard & Poor's has begun to consider quality of life in its bond ratings in the USA. (Tillman, 93-04:7-8)

The interest in indicators of the quality of life has also been given impetus by the recent incorporation of sustainable development and healthy communities principles in Canadian public policy. Municipalities are more aware of the relationships among the environment, the economy, and social well-being. They want to measure their quality of life as defined by these new integrative principles.

Quality of Life

The popularity of the term "Quality of Life" comes in part from the fact that everyone aspires to it. It has a resonance that people identify with, and it can be interpreted by each of us on the basis of our values and expectations. For this very reason it is also highly subjective and open to interpretation. Unfortunately, the meaning of the term is elusive and it is difficult to address in operational terms because it refers to a state of well-being that is highly subjective on the individual level. There is extensive literature on measuring quality of life in the aggregate at the community level, but there are significant disagreements about how best to measure it, on the selection of key indicators, and on how to use the results in a public policy perspective.

Because of its popularity and its evocative imagery, the term "Quality of Life" is also widely used by professionals, and appears in many public documents as an objective of government. There is a real need for a model which can provide a coherent framework for quality of life, and assist in selecting relevant indicators. For example, virtually everyone agrees that an adequate supply of housing, low crime rates, clean air, a sound economy, and an educated population are good measures of the quality of life. In recent years new terms such as "sustainable development" and "healthy communities" have appeared in professional and popular circles. They include the concept of quality of life, and have the advantage of presenting a coherent conceptual framework for exploring it. They also provide some guidance as to the processes and directions required to achieve it.

Indicators

In order to give operational meaning to Quality of Life to guide public policy, it is necessary to measure it. Decision makers require the means to

determine whether quality of life is improving, or how it is evolving over time. This creates a demand for indicators, and indeed interest in indicators is high in Canada at this time, as evidenced by the popularity of "state of the environment" reports. The need to develop indicators of urban and environmental conditions also appears in international declarations including those of the United Nations. Indicators are an important tool to assess and monitor the quality of life.

However, given the difficulties in standardizing subjective indicators, and given the wide range of objective indicators from which to choose, it is difficult to agree on a selection for a given application. Therefore there are few instances where the same set of indicators has been used for the same city in two time periods, or where two cities have used the same indicators. This has limited the utility of indicators as a public policy tool, since one of the most productive uses is to establish trends and comparisons.

CHAPTER 2 - DEVELOPMENT AND DESCRIPTION OF THE MODEL

Given the interest in quality of life and the desire to improve the operational use of indicators, CMHC commissioned The Institute for Social Research at York University to undertake a feasibility analysis on modelling quality of life indicators in Canada. The research goal was to determine whether it would be feasible to develop a practical set of indicators to measure quality of life. This section of the report summarizes the model.

Annotated Bibliography

The first part of the study was a literature survey entitled Quality of Life Research: An Annotated Bibliography which was first published in May, 1992. It was revised in 1996.

This review of the literature on indicators indicated an evolution over time. In the early 1970's there was an emphasis on quantitative objective indicators based on census type data. In the late 70s and early 80s there was a shift in interest to qualitative subjective indicators based on perceptions typically gathered through interviews and other survey instruments. Since the mid-1980s there has been a growing interest in the environment and in health as part of a broad planning context in which to effect policy directions to maintain the quality of life.

Community Oriented Model of the Lived Environment (COMLE)

The second part of the study was to develop a comprehensive quality of life model appropriate to the municipal level. The third part of the study was to explore the availability of data for the model. These were published by CMHC in October of 1992 as Modelling Quality of Life Indicators in Canada: A Feasibility Analysis. [The French version is Modélisation des indicateurs sur la qualité de vie au Canada.]

The Feasibility Analysis contained two conceptual models for quality of life. The first model was the "Conceptual Framework of Quality of Life". It attempted to measure quality of life from an objective perspective, while recognizing that each person's quality of life is mediated by life experiences. The Conceptual Framework is both comprehensive and complex. Thus, it was expected to be difficult to implement as a policy development instrument.

The second model in the Feasibility Analysis was the "Community Oriented Model of the Lived Environment" (COMLE). It was developed as a more workable alternative to the first model and is based on ideas from sustainable development and new health perspectives. More specifically, the basic structure of the model drew from a discussion paper prepared by the Planning Department of the Municipality of Metropolitan Toronto, Towards a Liveable Metropolis, (which has since been expanded and published as the draft official plan The Liveable Metropolis). That document utilizes the conceptual frameworks of "environmentally sustainable development", "healthy communities", and the "ecosystem approach" to planning. It explicitly recognizes the linkages among economic vitality, social well-being and environmental integrity, and that no one of these components should be emphasized at the expense of the others.

COMLE has an additional component for theoretical completeness: "cultural congruence", which is defined as the degree to which things match societal norms and expectations. In some cases these norms are expressed by governments in the form of minimum standards, but there is no defined threshold for most of the indicators at the municipal level.

Sectoral Policies /Programmes

Figure 1 presents the conceptual COMLE "A Community Oriented Model of the Lived Environment". In order to apply the model in a community context, a list of "Sectoral Policies /Programmes" that would be typical of local government is presented in the first column on the left. In many cases these would be represented by city departments such as land use, transportation, or environment. In other cases they represent

services delivered at the local level, but not necessarily by municipal government, such as health, education, or social welfare. Municipal jurisdictions in Canada vary, partially as a function of provincial legislation. While the integrative approaches typified by healthy communities and sustainable development may lead to new ways of organizing responsibilities, the list in COMLE reflects the way most local governments are currently structured. Individual municipalities using the model may vary the list of Sectors to suit their situation

Components of Liveability

The second or middle column shows the major dimensions by which each Sectoral Policy/ Programme should be evaluated, known as "Components of Liveability". The arrows show that, at least in theory, all Sectors affect economic vitality, social well-being, environmental integrity, and cultural congruence and all four of these are linked. This is the meaning of sustainable development, healthy communities, and ecosystems planning, and this is the essence of the COMLE model. These relationships have often been unrecognized in the past, and the COMLE model makes an important contribution to our understanding of them.

Indicators of Liveability

The third or right column is where one would identify the "Indicators of Liveability". In practice it may not be possible to find indicators to demonstrate the connection between every single municipal department or non-municipal service and the economy, and social well-being, and the environment. However, working through the model is beneficial to the user's operational understanding of the healthy sustainable paradigm. The return arrow is a reminder that the indicators should be monitored over time.

Figure 2 is titled "Indicators and Specific Measures of Liveability: Housing", and it is reproduced from the Feasibility Analysis. Figure 2 provides an illustration of indicators of the relationship of the "sector" called "housing" to the "components of liveability" called "economic vitality", "social well-being", and "environmental integrity". For example the economy is affected by employment generated through housing construction and renovation. The social well-being of the population is affected by the suitability and adequacy of the housing units they occupy. The environment is affected by the density of housing, since greater densities are more energy efficient.

The tables in CMHC's Feasibility Analysis list suggested Indicators of Liveability for each Sectoral Policy /Programme.

Specific Measures

Figure 2 also introduces a fourth column of "Specific Measures" on the right, in this case for housing. The model as per Figure 1 might be sound conceptually, but if it were not possible to measure it then it would not be useful to the municipal practitioner. Therefore measurements of the indicators are critical. Figure 2 gives a detailed example of Indicators of Liveability and Specific Measures for the Housing Sector. For example, one way to indicate the impact of housing on employment is to count the number of new housing units built. However, since that would not capture the home renovation market, another way to measure it is to total the value of units built. Measures of the suitability and adequacy of dwelling units are the number of persons per room and the number of units in need of major repairs. Measures of density include persons per square kilometre or lot size, the former counting people and the latter counting space allocation.

It is important to understand the distinction between Indicators and Specific Measures as these term are used in the Feasibility Analysis and this report. Indicators express a relationship or a connection, such as causality or correlation. Specific Measures are data which serve as a surrogate for the Indicator, representing in statistical form the dynamic underlying association. Thus "the number" is not "the indicator" in this context. Indicators can be observed phenomenon or logical conceptual constructs, but Specific Measures rely on data availability. Sometimes the Specific Measure most available is not the most accurate portrayal of the Indicator. In some cases it is necessary to have more than one measure to accurately convey the indicator. This is to be expected in a model exploring the new paradigms of sustainable development, healthy communities, and ecosystem

planning. The authors of the COMLE have suggested reasonable compromises which allow the beneficial use of the model.

Thus, to continue with the foregoing examples, the number of housing units constructed is only an indirect measurement of employment, but building permits have the advantage of being a readily available statistic for municipalities. Persons per room is a commonly accepted measure available from the census. In most municipalities the energy efficiency of urban and suburban form is a recent consideration for which there may not be good local data. Therefore density is used as a proxy measure to give a general indication of the situation.

The tables of CMHC's Feasibility Analysis show suggested Specific Measures for each suggested Sectoral Policy/Programme. The appendix shows the known or likely data source for each. It was concluded from this that a sufficient number of measures would be available to make the model workable.

Qualitative or Subjective Indicators

COMLE is based on objective measures from existing data sources. Therefore it does not provide subjective indicators, which limits its performance in two ways. Firstly, some process must be engaged to identify the priorities and issues of concern to the users of the model. This might take the form of public meetings or opinion polls if the results are to be used by politicians or the public, for example. A strategic planning exercise might suffice to identify priorities if the model is only intended for staff use. As noted by participants in the Pilot Test, such subjective information is essential in adapting COMLE to local use. It was also observed that the model is a tool within a larger process, not an end in itself.

The second limitation stemming from a lack of subjective indicators is simply that since individual quality of life is ultimately a subjective phenomenon, no quantitative model can completely capture it.

Figure 1
A Community Oriented Model of the Lived Environment

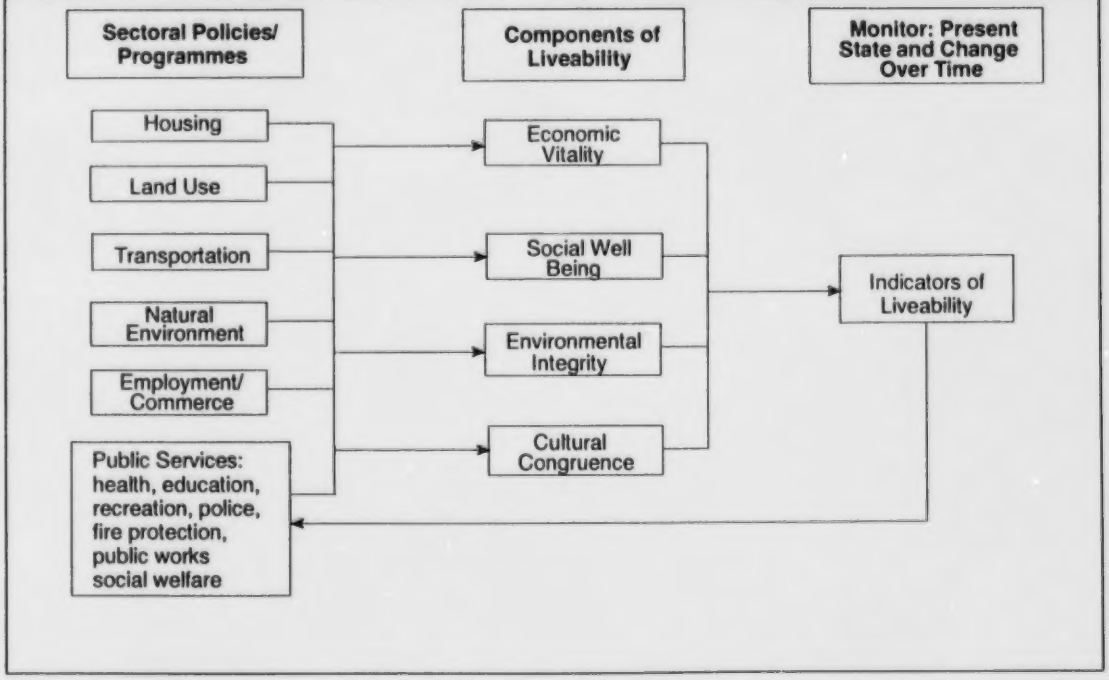
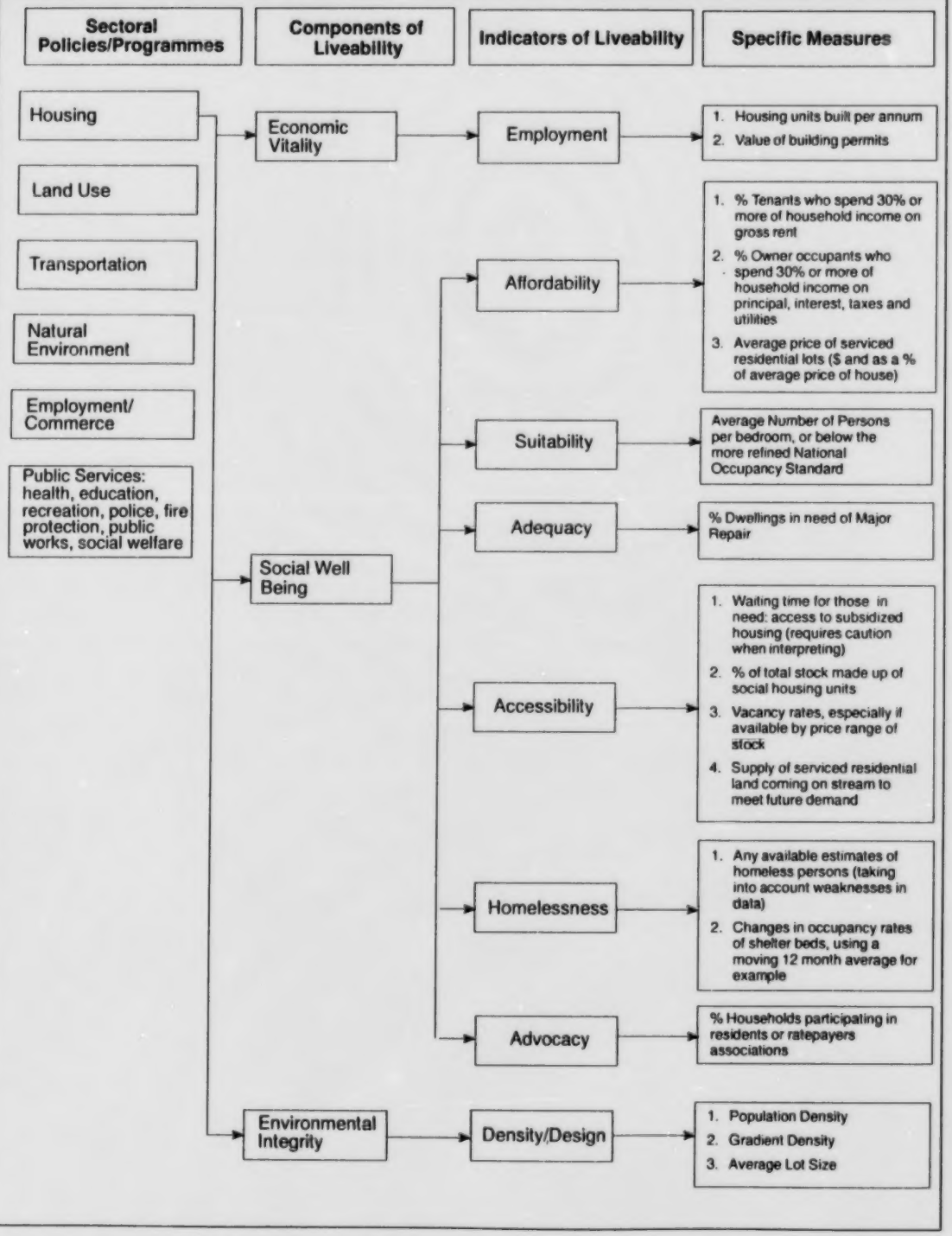


Figure 2
Indicators and Specific Measures of Liveability: Housing


Sectoral Policies/Programmes
Components of Liveability
Indicators of Liveability
Specific Measures
Housing
Land Use
Transportation
Natural Environment
Employment/ Commerce
Public Services: health, education, recreation, police, fire protection, public works, social welfare
Economic Vitality
Social Well Being
Environmental Integrity
Employment
1. Housing units built per annum
2. Value of building permits
Affordability
1. % Tenants who spend 30% or more of household income on gross rent
2. % Owner occupants who spend 30% or more of household income on principal, interest, taxes and utilities
3. Average price of serviced residential lots ($ and as a % of average price of house)
Suitability
Average Number of Persons per bedroom, or below the more refined National Occupancy Standard
Adequacy
% Dwellings in need of Major Repair
Accessibility
1. Waiting time for those in need: access to subsidized housing (requires caution when interpreting)
2. % of total stock made up of social housing units
3. Vacancy rates, especially if available by price range of stock
4. Supply of serviced residential land coming on stream to meet future demand
Homelessness
1. Any available estimates of homeless persons (taking into account weaknesses in data)
2. Changes in occupancy rates of shelter beds, using a moving 12 month average for example
Advocacy
% Households participating in residents or ratepayers associations
Density/Design
1. Population Density
2. Gradient Density
3. Average Lot Size

CHAPTER 3 - DESCRIPTION OF THE PILOT TEST

This section of the report describes CMHC's Pilot Test of the Community Oriented Model of the Lived Environment, undertaken to confirm that it was suitable for use by municipalities and others. It was decided to seek the cooperation of three municipalities to perform the test and to engage David Sherwood, a consultant on planning for healthy sustainable communities, to guide the test.

Objectives

The objectives were posed as a series of questions to the participating municipalities:

1. Is the COMLE model reasonably **practical** to use, in the sense that the data is readily available?
2. Is it **affordable**, in the sense that it can produce results within a reasonable time period using existing staff resources?
3. Is it **adaptable** to local issues and local government structures?
4. Is it **useful** and would it improve or supplement existing municipal processes such as official community plans or strategic plans?
5. To what extent is it an acceptable substitute for **qualitative data**?
6. Does it ask the **right questions**? In other words, does the framework of sustainable development, healthy communities and ecosystems assist in understanding the community and in improving its quality of life?
7. Based on the experience of conducting the pilot test, **should the COMLE model be recommended for use by others?**

Selection of the Municipalities

CMHC sent letters to seventy-five municipalities across Canada, seeking their interest in participating in the Pilot Test. The role of the municipality was to tailor the COMLE model to local circumstances, to gather the indicators, to report the results, and to analyze the test experience.

Twenty-two responses were received which was significant, given that it was estimated that the test would require at least twenty person-days of staff time without financial compensation from CMHC. This is proof of the interest in quality of life and indicators at this time.

There were three broad criteria for selection, being familiarity with the subject matter, ability to meet the time constraints, and representivity. All had to be able to meet the deadlines, but it was desirable to have a range of population sizes, experience levels, and geographical locations. Although not a requirement, it was hoped that at least one would utilize a Geographic Information System (GIS). Following an evaluation of the municipal expressions of interest three were selected:

- City of Quebec
- City of Toronto
- City of Fort McMurray

In addition, the City of Montreal's healthy community project (Vivre Montréal en santé) was accorded observer status to the test.

Duration of the Test

The test was conducted in a very short period of time. While this was a constraint to all concerned, it did probe one of the desirable features of the COMLE model, which is the ability to implement it quickly based on existing readily available data. Only thirteen weeks elapsed between the date the municipalities were informed of their selection and the deadline for their report to CMHC.

CHAPTER 4 - MUNICIPAL TEST EXPERIENCES

The following section of the report provides a brief description of each municipality which participated in the Pilot Test, of the department responsible for the test, the manner in which they conducted the test, and the distinguishing features of their experience. The full report prepared by each city is in this document.

Quebec

The City of Quebec is the oldest city in Canada, founded by Champlain in 1608, and declared a World Heritage Site by UNESCO. It is the capital of the Province of Quebec, but not the largest city in that province. The population in 1991 was 168,000 in a land area of 89 square kilometres. The population of the Quebec Urban Community in 1991 was 490,000 and of the Census Metropolitan Area 645,000.

The mandate for the Pilot Test was given to the strategic planning department (Service de planification), which has 22 professional and support staff. The department's approach to the pilot test was influenced by their recently completed draft strategic plan for the municipal corporation, and the staff were familiar with indicators. The fact that they had good working relationships with the staff of other city departments, who were accustomed to them requesting information in support of the strategic plan, undoubtedly facilitated the process. They had access to an electronic data bank but did not use their GIS system to any significant degree. The Pilot Test was conducted by three staff members on a part-time basis and was completed within 10 weeks.

Quebec conducted the test in five phases, plus a follow-up.

1. Become familiar with the COMLE model and the suggested list of indicators and specific measures.
2. Ascertain the availability of specific measures internally (municipal departments) and externally (non-municipal agencies).
3. Adapt the model by modifying the list of Sectoral Policies/Programmes.
4. Adapt the model by modifying the list of Specific Measures.
5. Collect the data and write the report.
6. Submit the report to CMHC and circulate it within the municipality.

The following are among the distinguishing features of the Quebec pilot test. As a central city which is frequently in economic competition with peripheral municipalities, they were quite concerned with the potential for a standard model to impose unfair comparisons. They suggested that indicators on cultural facilities and activities would add balance. They maintain that quality of life implies lifestyle choices, and the attractions of a highly urbanized heritage city cannot be statistically compared to the attractions of a low density modern suburb. Their regional setting also made them sensitive to the geographic scale of the data. Certain indicators such as the number of university classrooms or hospital beds are more accurately reported at a regional level, whereas other indicators such as regional employment rates mask significant intra-regional disparities. They prepared a large wall chart of the COMLE listing Indicators of Liveability and Specific Measures by Sectoral Policy/Programme and by Component of Liveability. It was very useful to all participants in the test, and revealed COMLE's deficiency in environmental matters. Finally, their corporate planning background led them to suggest such improvements to COMLE as the inclusion of indicators of the financial health of the municipal corporation. They made relatively minor adjustments to the COMLE model for the purposes of the Pilot Test.

Their complete report is available in Appendix A. It contains commentary, a list of indicators and specific measures indicating the geographic scale and the ease or difficulty of procurement, and a list of specific measures added to COMLE.

Toronto

The City of Toronto is at the heart of the largest urban agglomeration in Canada. The population of the City is 635,000 in a land area of 97 square kilometres. The population of Metropolitan

Toronto is 2.2 million, and the population of the Census Metropolitan Area is 3.9 million. Toronto is the capital of Ontario and the Greater Toronto Area is the economic heartland of Canada.

The mandate for the Pilot Test was given to the Healthy City Office which has six professional and support staff. Toronto is the birthplace of the international Healthy City concept and the Office had been working for two years on the first "state of the city" report in Canada. (It was published in June, 1993 as Toronto's First State of the City Report.) The staff were therefore very knowledgeable on the subject of indicators, had excellent contacts in other city departments, and reasonably good contacts in non-municipal agencies. They used their participation in the Pilot Test to compare the COMLE model to their state of the city approach. They had indirect access to electronic data through line departments but Toronto does not have a GIS system or a central data bank. The test was conducted by a team of four staff in about 35 person days. Delays were experienced in assembling the team, and therefore in completing the test, but the effective elapsed time was still comparable to the other cities at about 12-14 weeks.

Their methodology was as follows:

1. adapt COMLE to the seven Sectoral Policy/Programme areas of the State of the City report;
2. prepare flow charts for each Sector, showing the three COMLE Components of Liveability (economy, social, environment);
3. begin search to confirm data availability (criteria: it must be available within three weeks);
4. substitute the goal areas of the State of the City report for the COMLE indicators, delete some indicators, add others;
5. final selection of Indicators and Specific Measures;
6. collect data; and
7. write report, including commentary on each indicator.

The distinguishing feature of the Toronto pilot test was that they invested more time and made the most adaptations of the COMLE model. While the three Components of Liveability and the healthy sustainable conceptual framework were strictly maintained, there were changes to the titles and types of Sectoral Policies/Programmes, additional or different Indicators of Liveability and a very different selection of Specific Measures.

In many ways Toronto "stretched the model". For example, they made an effort to find indicators of the linkage of each Sector to each Component of Liveability (economy, social, environment), going beyond the COMLE indicators published by CMHC. On the other hand, they were more selective, gathering fewer Specific Measures where they felt a longer list would result in redundancy. Their community oriented background showed in their selection of "community health" measures as compared to "health care", for example, and in the inclusion of community advocacy as a measure of social well-being. (According to the Healthy Communities concept, the degree of public participation in civic life is a good indicator of the health of the community.) They also used more "output" measures based on perception or consumption rather than "input" measures based on investments of public budgets. Although time did not permit, they would have preferred indicators at the neighbourhood level. With the benefit of their State of the City report they were able to provide more context and commentary to the indicators in their Pilot Test report. Being part of a large city government in a larger metropolitan government, Toronto had access to many specialized data sources that small cities would not enjoy.

Their complete report is available in Appendix B. It contains commentary, seven flow charts listing the indicators and showing the links between the Sectors and the Components of Liveability, and tables of indicators and specific measures with commentary.

Fort McMurray

Although it has a history as a frontier post, Fort McMurray is one of the newest cities in Canada. It was incorporated in 1980 during a period of rapid growth, and most of the urban fabric is of recent construction. A resource community whose economy is based primarily on the tar sands, it is

located in relative isolation 450 kilometres north of Edmonton. It has a young and active population with a busy community life and many recreation facilities. The population in 1991 was 35,000 in a land area of 56 square kilometres.

The mandate for the Pilot Test was given to the Planning Division of the Development Services Department, which has five professional and support staff. The staff had no previous experience with indicators, but Fort McMurray is proud of its quality of life and the results of the test were expected to be useful in the preparation of the General Municipal Plan. There is no electronic data base and no GIS system, however there is an annual municipal census and the main employers in the area cooperate in making their statistics available to the municipality. The Pilot Test was conducted by two staff on a part-time basis for the equivalent of about one person-month. It was completed in 13 weeks.

The methodology for the test was very straight forward. They simply took the COMLE model as published by CMHC and proceeded to find every Specific Measure on the list (within reason).

The following are the distinguishing features of the Fort McMurray pilot test. This city enjoyed many of the advantages of being a small place with a strong community spirit: requests for data from outside agencies were processed with a minimum of delay and a maximum of cooperation. When data did not exist it was sometimes possible to conduct a unit count within the time frame. Where larger cities might have to make the effort of categorization and classification to aggregate data entries, Fort McMurray could simply make a nominal list of all entries for a given measure. They chose to collect a higher proportion of the specific measures suggested in the CMHC report than the other two cities.

The disadvantages of a small city were revealed when certain data was only available on a provincial or northern Alberta scale, and it would have been unreasonable to expect the department to pay for special orders from Statistics Canada. The small size of the department meant that staff working on the test were frequently required to interrupt it to deal with other urgent business. To their credit they met the deadline for the Pilot Test nonetheless.

Their complete report is available in Appendix C. It contains commentary, a list of data sources, maps, and a listing of the specific measures (along with base year and source).

Montreal's Participation

Montreal was not a formal participant in the Pilot Test, and therefore did not provide a written report. However, the staff of the healthy communities project (Vivre Montréal en santé) participated in discussions of the COMLE model. Unlike Toronto, whose healthy community office began as an inter-departmental coordinator and initiator, Montreal has approached its healthy community project as a series of neighbourhood projects.

Their comments on COMLE were based primarily on their publication Guide pour un portrait de quartier. This guide explains how citizen committees can use indicators to better understand their living environment by collecting data on their neighbourhood. It explains how to organize a committee, how to read maps, how to access quantitative data, and how to collect qualitative data in a structured manner. It develops the community approach suggested by Toronto in much greater detail. It is highly recommended reading and is thought to be the best work of its type to date in Canada.

CHAPTER 5 - FINDINGS WITH RESPECT TO THE STRUCTURE OF COMLE

This section of the report describes the results of the Pilot Test in regards to the basic structure of the Community Oriented Model of the Lived Environment. Please refer back to Figure 1 and Figure 2 for a comparison to the model as published by CMHC in the Feasibility Analysis. As described below, the test confirmed the structure of COMLE.

Sectoral Policies /Programmes

Each of the municipalities selected slightly different Sectoral Policies or Programmes, but there is a high degree of consensus. The list in Table 1 is very similar to the one suggested in CMHC's Feasibility Analysis. In some cases the same data were collected under different names, which is not a problem since the model is intended to be adaptable to best serve the needs of each community. A variance in the list of sectors is to be expected. Toronto, and especially Montreal, included more community-based measures such as community activism. Quebec suggested that in future the municipal corporation should be included in the analysis, for example its fiscal performance and the condition of its infrastructure (as an asset or a liability). The conclusion is that the Pilot Test supports the COMLE model in terms of its approach to Sectoral Policies /Programmes.

Table 1
List of Sectoral Policies/Programmes Used in the Pilot Test

Housing	Q	T,	F	M
Land Use	Q	x	F	M*1
Transportation	Q	T	F	M*1
Environment	Q*2	T	F*2	M
Employment/Commerce	Q	T*3	F	M*3
Health	Q	T*4	F	M
Education	Q	T	F	M
Recreation	Q*5,	x	F	M*1
Crime & Safety	Q	T*6	F	M
Social Welfare	x	x,	F,	M*7
Community Life	x,	T*8	x,	M
Socio-demographic	x*9	x*9	x,	M
Socio-economic status	x,	x,	x,	M*3&7

Q = Quebec, T = Toronto, F = Fort McMurray, M = Montreal,
x = sector not retained by the city,
* = used a different name for this sector

Notes

1* (for "land use" Montreal used the term "urban planning", which includes aspects of transportation and recreation)
2* (Quebec and Fort McMurray used the term "natural environment")
3* (Toronto used "economic life") (Quebec indicated to the author that they would support a term like economic life) (Montreal divided this into two sectors, "economy" listed here and "socio-economic status" listed at the end)
4* (Toronto used "community health")
5* (Quebec used "recreation and culture")
6* (Toronto used "safety and security")
7* (Montreal included some aspects of "social welfare" under "socio-economic status")
8* (Toronto included some aspects of "community life" under "community health")
9* (Quebec supported the inclusion of demographic data in their comments to the author) (Toronto included demographic data in their state of the city report)

Components of Liveability

All of the municipalities accepted the Components of Liveability in the COMLE model, which was to be expected since they are fundamental to the framework of sustainable development, healthy communities, and ecosystem planning.

Table 2
Components of Liveability Used in the Pilot Test

Economic Vitality
Social Well-Being
Environmental Integrity
and, although not measured separately, Cultural Congruence

Indicators of Liveability

Quebec and Fort McMurray used the list of suggested Indicators of Liveability found in CMHC's Feasibility Analysis, although in some instances they were not able to find data to measure them. Toronto made a number of modifications to the list, which should be viewed as a reasonable adaptation to local circumstances that confirms the flexibility of the model. Montreal's Guide pour un portrait de quartier contains suggestions for other possible indicators.

Quebec made the interesting observation that while the COMLE model as shown in Figure 1 shows relationships between all Sectoral Policies/ Programmes and all Components of Liveability, the development of the model as shown in the tables of the Feasibility Analysis is unequal. Note the number of Indicators of Liveability per Sector in the following table.

Given the sustainable development basis for the model, it is highly unlikely that its authors would suggest that there are no indicators of the relationship between environment and economy. And the proponents of the healthy communities concept would not accept that there are no relationships between health and the environment, or between health and the economy.

Table 3
Number of Indicators of Liveability Published by CMHC

Economic Vitality	13 indicators (none connecting to Environment, Health or Education)
Social Well-Being	28 indicators (none connecting to the Environment)
Environmental Integrity	7 indicators (none for Employment/Commerce, Health, Education, Crime & Safety, Social Welfare)
Total 48 indicators	

However, these gaps should not be surprising. It is precisely because these relationships were unnoticed and unmeasured in the past that municipalities tend not to have indicators for them, and that data sources are poorly adapted to collecting specific measures for them. This should receive further attention from CMHC and others in the research community. For example, the Toronto test suggested a more balanced approach as noted below.

Table 4
Number of Indicators of Liveability Used by Toronto

Economic Vitality	10 indicators (connections to all of Toronto's selected Sectoral Policies/Programmes except Safety)
Social Well-Being	21 indicators (connections to all)
Environmental Integrity	11 indicators (connections to all but community Health and Education)
Total 42 indicators	

The conclusion is that the COMLE model is supported by the Pilot Test as regards Indicators of Liveability, but that more indicators should be developed to demonstrate linkages to the Sectoral Policies /Programmes of municipal governments and other local authorities. This is particularly the case for Environmental Integrity, and somewhat the case for Economic Vitality.

Table 5
% of Specific Measures Compiled by Quebec and Fort McMurray

Sectoral Policy/Programme	# Specific Measures	Quebec	Fort McMurray
Housing	11	82%	100% collected
Land Use	13	77%	100%
Transportation	9	78%	100%
Environment	7	100%	100%
Employment/Commerce	24	71%	73%
Health	9	89%	66%
Education	12	42%[1]	92%
Recreation/Culture	16	65%	100%
Crime & Safety	10	90%	100%
Social Welfare	5	0%[2]	60%
	Total 117		

Notes

1. Quebec did not receive the same cooperation from the school boards that Fort McMurray did. In some Canadian jurisdictions there are several school boards in the same urban area, organized according to language, religion and geography.
2. Quebec did not attempt to collect social welfare data on the grounds that this is not a municipal jurisdiction and it could not be collected within the time limits of the Pilot Test.

Specific Measures

Data availability is essential to the use of COMLE by municipalities. Here are the results of the data search by Quebec and Fort McMurray, which took the suggested list of Specific Measures in CMHC's Feasibility Analysis as a point of departure. This table shows the number of Specific Measures by Sectoral Policy/Programme, and the percentage that each was able to collect within the time limits of the Pilot Test. The following table shows that most data was readily available for areas of municipal responsibility. The short time allowed for the test was a problem when data had to be obtained from non-municipal sources.

Fort McMurray used the list of suggested Specific Measures found in CMHC's Feasibility Analysis, subject to availability. Quebec used the same list, but was more selective and added several measures, for a total of 104. Toronto used a shorter list (81), and a number of different measures. Many of Toronto's measures were available from local data sources rather than the national census.

Refer to the appendices for lists of the Specific Measures used by each municipality.

Quebec provided the following additional statistics: 55 percent of the Specific Measures were easy to collect, 17 percent were difficult, 19 percent were not possible to collect within the time frame of the Pilot Test, and 9 percent were insufficiently defined to permit collection. The Quebec report in Appendix A provides further details.

Quebec also observed that of the three Components of Liveability, the Feasibility Analysis shows relatively more Specific Measures for Social Well-Being and many fewer for Environmental Integrity. This is in part as a result of having fewer Indicators of Liveability as noted in the previous section.

The conclusion concerning the Specific Measures suggested in the Feasibility Analysis for the COMLE model is that the data to support the model are generally available, but that more Specific Measures should be developed for Environmental Integrity.

Table 6
# of Specific Measures by Component of Liveability in COMLE

Economic Vitality	30 specific measures
Social Well-Being	73
Environmental Integrity	14

CHAPTER 6 - FINDINGS WITH RESPECT TO THE IMPLEMENTATION OF COMLE

The following, in no particular order, are a number of issues relating to the implementation of the Community Oriented Model of the Lived Environment.

Advice for First Time Users

COMLE is a very useful tool but it should be taken in context. First of all, since it uses only objective data it is necessarily incomplete and should be complemented by subjective information on quality of life perceptions. Questionnaires, public meetings, opinion polls and similar techniques will complement the findings from the objective measures as one part of a process to provide information.

It is important to know the audience or end user, since that will assist in a judicious selection of Indicators and Specific Measures. The public has different information needs than the municipal staff, for example, and plunging into a COMLE exercise without knowing the issues that are likely to be of interest in the community is not advised. COMLE presents a holistic structure that gives general coverage to all sectors, but its individual adaptation should be especially sensitive to indicators that measure quality of life in areas of particular interest to the community.

It is possible to take COMLE "off the shelf" and benefit from it, as for example Fort McMurray did for the purpose of this test. However, the exercise will be improved if the user takes note of the issues raised in this report and consults CMHC's publications, Modelling Quality of Life Indicators in Canada: A Feasibility Analysis and Quality of Life Research: An Annotated Bibliography. If time permits, the model should then be adapted for local use. For example it is not necessary, and may not be desirable, to collect every Specific Measure listed in the Feasibility Analysis. On the other hand, an attempt should be made to have an indicator linking each Sector (eg - transportation) to each Component of Liveability (economic, social, and environmental), and to find at least one measure for each in keeping with the framework of healthy communities, sustainable development and ecosystem planning.

Monitoring is very important. All municipalities agreed that establishing and tracking trends is significantly more informative than a one-time survey of the state of the community. The ultimate goal is to maintain and improve quality of life.

Reporting Format

Statistics alone do not convey meaning. Therefore it is necessary to provide the reader with context and comments. It was noted by most of the test participants that in a report to department heads, politicians, the public, etc. it would be useful to limit the number of Specific Measures, to interpret the results, and to provide contextual comments on the relevance of the Indicators to public policy. It is sometimes said that organizations learn from reports but people learn from stories. It can be useful to collect subjective and even anecdotal information to facilitate communication efforts. Toronto's First State of the City Report is a good example of a text on indicators that is designed for the ordinary citizen.

Small Towns, Big Cities

Potential users from smaller cities, towns and rural areas should read the Fort McMurray report in the Appendix C material. Some census data is not available for smaller centres which are aggregated with surrounding areas. Even if a special order is placed with Statistics Canada, when the sample size is too low in a given geographic unit, government policies concerning privacy preclude the release of the information on the grounds of confidentiality.

On the other hand, smaller communities may find it easier to obtain data from non-municipal agencies and other municipal departments, or to compile the data themselves specifically for a COMLE study. Refer to the Montreal Guide for ideas on obtaining volunteer citizen support for small area indicator collection.

Potential users from big cities should refer to the Toronto report in the Appendix B, and to their State of the City report. These demonstrate how to take advantage of specialized local data sources in creative ways.

Thresholds and Standards for Comparison

Several of the municipalities who applied to participate in the Pilot Test were looking for standards or thresholds by which to measure their performance. Others wanted to compare their quality of life to other communities.

COMLE does not prescribe performance standards, and as noted in the discussion of "cultural congruence" there may not be an accepted standard at the municipal level. To the extent that COMLE is adapted by each user to suit local situations, some of the results will not be comparable among cities. Still, if COMLE is incorporated by many cities some informative comparisons will become possible. CMHC did not intend COMLE to be used as a competitive yardstick, but as a policy tool. The recommended approach is for each municipality to monitor its quality of life over time, and to chart its own evolution.

Composite Quality of Life Index

Related to the foregoing discussion is the debate surrounding "summary indexes". As discussed in CMHC's Feasibility Analysis and as reviewed in its Annotated Bibliography, there is a "rating places" literature that attempts to rank communities according to their attractiveness for investment or as places to live.

There are a number of theoretical and methodological difficulties with this approach, such as how to weight each Sectoral Policy/Programme. Coincidentally, "L'actualité" magazine published such a rating during the Pilot Test. It was severely criticized by central cities and small towns as being laden with hidden values favourable to new low density suburbs.

As noted previously, it is not CMHC's objective to provide an index for comparison among municipalities. COMLE was developed on a very different basis than this approach and does not provide the user with a single composite quality of life index.

Geographic Scale

There was general agreement among the participants in the Pilot Test that, given that COMLE is intended for use at the local government level, most indicators should be at the municipal scale. Where the municipality is part of a larger urban region, however, some indicators are more appropriately measured at the regional level, For example, the campus of Laval University is only partially located within the city limits of Quebec, and a regional hospital may serve more than one municipality.

Where some parts of the city are significantly different from others it would be more worthwhile to gather data on a neighbourhood basis, recognizing that an additional effort is required to do so. It should also be noted that census data may not be available at this scale, especially in smaller cities and towns.

None of the Pilot Test municipalities were able to gather data at the neighbourhood level within the time limits established, but interest in doing so was expressed. Toronto included some neighbourhood level measures in its State of the City report. Montreal staff argued persuasively that when dealing with citizen groups the neighbourhood level is usually the most appropriate because the public relates best to issues closest to home. Their Guide pour un portrait de quartier is an excellent resource in this regard.

One of the disappointments of the Pilot Test was that none of the test cities used a Geographic Information System (GIS). It had been anticipated that this would facilitate the cost-effective use of small area data.

Input Measures versus Output Measures

Many of the Specific Measures for COMLE in CMHC's Feasibility Analysis are input measures such as the magnitude of the expenditure for a given service. From the point of view of a citizen or consumer, however, what affects quality of life is the outcome or effectiveness of the service. Using the example of crime and safety, the number

of police vehicles on patrol is a less direct measure of quality of life than the number of victims of crime (although the former will influence the latter).

Therefore more of the Specific Measures should be output measures. This was supported by all the municipalities but only Toronto was able to give it much effect during the Pilot Test, in part because so much of the readily available data is compiled on the basis of inputs. This subject is also discussed in the Feasibility Analysis.

Qualitative or Subjective Measures

As stated previously it is important to complement objective indicators with subjective indicators. To continue the illustration based on crime and safety considerations, an important influence on the quality of life is the number of places that people will avoid at night due to fear of crime. This affects the quality of life of people who are not themselves victims of crime by effectively limiting their choices, yet it will not be found in the police budget or among the crime statistics. It can only be measured through qualitative instruments such as opinion surveys. It was noted by one of the project participants that in this context, unmarked police cars may be more effective in apprehending criminals but less effective in reassuring the populace that they are protected by a police presence.

Base Year

It was recognized that it is not usually possible to use the same base year for all measures because census data is not published simultaneously, and in fact some useful 1991 data was not available at the time of the test. Furthermore, insisting on a common base year would preclude using more recent data from municipal and other sources. It was agreed that this does not invalidate the use of COMLE and it was recommended that the base year of each Specific Measure be acknowledged in any report.

The participating municipalities recommended that trend data is superior to single base year data. A Specific Measure that shows change over time is more meaningful than a measure that shows the status at one time. This would mean collecting the same measure for two time periods, which would increase the staff time budget the first time it is done.

Monitoring

It is not a CMHC objective that COMLE be used as a "snapshot", although it is still useful when used in that manner. The participants in the Pilot Test all recommended monitoring. Contrary to the extra staff time that would be expended to collect trend data in a first application or test, a repeat of the exercise in a future time period should require less time than the initial "test run".

The participants would not, however, recommend waiting five years for the next census to monitor trends. Many municipal and other statistics are compiled on an annual basis, which would permit more frequent monitoring of some of the indicators. While there was no attempt to agree on the appropriate monitoring period, there was some suggestion that a smaller group of core indicators could be reviewed annually with a significant update every 2-3 years and a complete revision every fifth year as new census data become available. This also would have the advantage of keeping indicators visible in the work programme of the department. The Toronto Healthy City Office hopes to publish a state of the city report every third year, which corresponds to the term of office of elected officials.

It was noted by Toronto in particular that the data gathered through COMLE would become strategic to basic city operations, and that the kind of information being sought to measure healthy sustainable performance is new. Therefore the needs of a COMLE type model should be acknowledged by any city department that is designing a central data collection apparatus for the city.

Staff Time Allocation

The 13 week timetable was found to be reasonable for data collection and basic reporting, and it was within existing staff time budgets. Naturally, additional time would have been required for data analysis, policy formulation, or the preparation of more comprehensive reports.

If the municipality is large and the department does not have a history of working with other departments, or if there does not exist a cooperative relationship with non-municipal agencies, more time would be required. Less time would be needed for a repeat of the exercise for monitoring.

CHAPTER 7 - EVALUATION OF COMLE

Returning to the objectives of the Pilot Test listed earlier in this report, the Community Oriented Model of the Lived Environment was given a positive evaluation as noted below. The responses to the following questions are based on the experiences of the municipalities participating in the Pilot Test. The full texts of the municipal reports are appended.

1. Is the COMLE model reasonably **practical** to use, in the sense that the data is readily available?

All of the municipalities in the Pilot Test found that there was sufficient data available within the short time frame of the Pilot Test to make COMLE a practical model. This report contains recommendations for enhancement.

2. Is it **affordable,** in the sense that it can produce results within a reasonable time period using existing staff resources?

All of the municipalities completed the test within 10 - 15 weeks Their time budgets were in the 20 - 35 person-day range with regular staff. They found this level of investment acceptable. Additional time would have allowed more data to be collected from non-municipal sources in the two larger cities, and would have provided a margin of comfort for the staff of the smallest participating department. Additional time would be needed to analyze the data for implications for public policy.

The participants stressed that one of the primary benefits of a COMLE model was the staff time they saved by not having to construct a model themselves! It is difficult to decide on a coherent set of indicators. It took Toronto about a year to develop the framework for their state of the city report, and it took Quebec a similar time to develop the outline for their strategic plan. Fort McMurray would never have the resources to develop a model comparable to COMLE. This amounts to an endorsement of CMHC's involvement in this field.

3. Is it **adaptable** to local issues and local government structures?

One municipality made significant adaptations to the model, one made moderate adaptations, and one chose not to adapt it. The staff of the observer municipality were of the opinion that it would be adaptable to their situation as well.

4. Is it **useful** and would it improve or supplement existing municipal processes?

All reported that it would make an improvement to existing processes such as official community plans, strategic plans, resource allocation decisions, and public information. Those studies normally have a data collection and background report component, so it was recommended that COMLE be incorporated into existing activities.

5. Is it an acceptable substitute for **qualitative** data?

COMLE was not designed to substitute for subjective or qualitative data, therefore it is not surprising that all municipalities responded in the negative. Rather, subjective or qualitative data should be used initially to inform a COMLE application, and afterward to assist in interpreting the results.

Toronto in particular suggested that new and creative sampling techniques, supplemented by computer technology, may enable more cost-effective and routine collection of qualitative data. Computer-assisted information kiosks and special telephone lines for the public to record their opinions were cited as examples.

6. Does it ask the **right questions**? Does the framework of sustainable development, healthy communities and ecosystems assist in understanding the community?

One of the unexpected findings of the Pilot Test was the educative value of COMLE. Most participants indicated that it provided them with a better understanding of these new concepts. They thought it would similarly inform other persons and departments within the municipal structure as it circulated. It was perceived as a useful bridge from theory to practice.

The fact that it includes non-municipal jurisdictions and services among its Sectoral Policies /Programmes was also seen as

provocatively enlightening. While most city staff are aware that the quality of life of the community relies on a host of agencies, many do not operationalize that awareness in their municipal mandates. COMLE underscores the inter-sectoral relationships that must be successfully explored to achieve a healthy sustainable community.

The Pilot Test increased valuable contacts among departments and with non-municipal agencies, and it is thought that there will be a legacy of increased cooperation.

7. Based on the experience of the Pilot Test, should **COMLE be recommended for use by others?**

All of the participants would be willing to use COMLE again and all would recommend its use to others, subject of course to the limitations and precautions expressed in this report, and recommending further development of the model as indicated in the next section. This is a strong endorsement, particularly when is considered that the participating cities and departments represent a range of sizes, experiences and mandates.

CHAPTER 8 - RECOMMENDATIONS

The following recommendations with respect to the Community Oriented Model of the Lived Environment are endorsed by the participants in the Pilot Test, and the consultant.

Recommendations to CMHC

It is recommended that CMHC prepare and publicize an enhanced version of COMLE to enable more municipalities to benefit from its use.

In preparing an enhanced version of COMLE, CMHC should:

1. retain the inherent strengths, such as the inter-relationships portrayed in Figure 1, the inclusion of municipal and non-municipal Sectoral Policies/Programmes, and the flexibility of suggested rather than standard Sectoral Policies/Programmes, Indicators of Liveability and Specific Measures;
2. add a significant number of Indicators of Liveability and Specific Measures for Environmental Integrity, and a smaller number for Economic Vitality;
3. reduce the list of Specific Measures by consolidating instances of redundancy, especially for Social Well-Being;
4. strongly consider the addition of Indicators and Measures of community life ["vie démocratique et vie communautaire"], of socio-demography, and of municipal fiscality;
5. improve the definition of certain Specific Measures as indicated in the reports of the participating municipalities;
6. substitute output measures for input measures where feasible;
7. explore the potential to enhance the model through GIS (Geographic Information Systems); and
8. explore the potential to include qualitative indicators based on sampling techniques using new cost efficient technologies.

CMHC should publicize the COMLE model, in existing and enhanced forms, to encourage its use.

It is recommended that CMHC take steps to ensure the collection of more of the Specific Measures, for example by requesting Statistics Canada to include them in the census.

It is recommended that CMHC reconsider the use of the term "Quality of Life" in this context.

The title Community Oriented Model of the Lived Environment does not include the words "quality of life" and the Pilot Test participants all questioned the use of the term. Quality of life is a highly subjective perception whereas the model uses objective data. A number of alternatives were suggested, such as model of sustainability, model of liveability, state of the city, quality of the city, and quality of the environment. The most promising term to describe what COMLE measures seems to be "quality of place".

Recommendation to Municipalities and Other Potential Users

The use of COMLE is recommended to municipalities and other local authorities.

The limitations and precautions expressed in this report are intended as advice to users. The recommendations to CMHC are intended as enhancements.

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APPENDIX A

A PILOT TEST OF COMLE IN QUEBEC CITY

Quebec City
Planning Department
June 1993

Introduction

Participating in the pilot test of an indicator model is all the more interesting for Quebec City in that it happens to coincide with a desire by the municipality to test the utility of such tools and to implement a system to identify trends in this field.

Although relatively short, the test period makes it possible to observe the advantages of such a model and to already detect its limits.

This report deals with the results of the pilot project carried out by Quebec City as part of its collaboration with a CMHC project on the modelling of quality of life indicators in Canada.

It is made up essentially by eight sections. The first presents the objectives and methodology used to conduct the test. The second deals with the availability of data and with the measurement capacity to quantify the indicators proposed by the model. In the third, we look at the model in terms of our local concerns.

The fourth section deals with the adaptation and/or operationalization of the model for our municipality. A fifth section positions the model in reference to surveys and qualitative measurements. The last three sections analyse the model in reference to its goals and objectives, its utility in municipal processes and its utility as a tool to assist in decision making and in allocating resources.

Test Objectives and Methodology

The objective of the pilot project is to test the COMLE model in a municipal context. In particular, it aims at identifying the degree of model operationalization and its capacity to assess, using objective measurements, the quality of life in urban areas.

The methodological element, borrowed by Quebec City, to execute the pilot test is divided in five stages:

1. Introduction to the model and its components; examination of the components, indicators and specific measurements;
2. Evaluation of the availability of specific measurements internally (municipal departments) and externally (regional agencies);
3. Adaptation of the COMLE to the municipal context; identification of sectorial policies in terms of their scope (local or regional);
4. Choice of indicators and specific measurements adapted to the municipality's context;
5. Collection of information from the municipal departments and request for data externally; data processing; execution of indicator sheets.

For the purposes of the test, we compiled specific measurements for the whole municipality and/or region (QCUC or QCCMA) depending on availability of data for reference year.

Availability of Data from COMLE

We, first of all, analysed the specific measurements proposed in COMLE in terms, on one hand, of their availability and, on the other, of their capacity to reflect viable indicators. Table A-1 presents the summary results of the availability analysis.

Each measurement was categorized in terms of the difficulty in obtaining data and the spatial analysis scale. Category E means that is is easy to obtain data from the City's municipal departments and from certain regional agencies. Category D means that it is difficult to compile and/or obtain this information. Category L means that the measurements identified are lacking. An X means measurements for our municipality are not available.

On the whole, reviewing the availability of data made it possible for us to observe that, in the Quebec City municipal context, most of the data is available with some degree of variation. Nearly 55% of the specific measurements proposed by COMLE are easily available, 17.2% are difficult to find, 18.9% are lacking and 8.9% are not available.

Lack of data may be due, on one hand, to a lack of explicitness in the definition of the measurement sought (what exactly is to be measured and/or how is it to be measured?) and, on the other hand, to the nonapplicability of the definition in the context of our municipality (beyond the scope of municipal responsibility).

It appears that the model offers uneven performances depending on dimensions identified. The model measures quite well, for all the sectorial policies, the social well-being component. It picks up relatively well the economic viability component for the local sectors. It proves to be particularly weak in its capacity to reflect the dimension of the natural environment, and that of the environmental integrity. It is to be noted that the model's performances decline as the scope of sectorial policies becomes more regional.

Table A-1
Availability of Data From COMLE for Quebec City

	Easy	Difficult	Lack	N/A	Total
Housing	8	3	3		14
Land use	6	4	5		15
Transportation	3	3	1	2	9
Recreation and Culture	10	1	2	4	17
Public Security	8		1		9
Employment and Commerce	18	1	2	3	24
Health	6	2		1	9
Education	3	5	4		12
Natural Environment	4	2	2		8
Social Well-Being	1		3	1	5
Total	67	21	23	11	122
Percentage	54.9	17.2	18.9	9.0	

We are in a position to conclude that COMLE is relatively practical to use to the extent that most of the data required are available. To enhance its operationalization in urban areas, however, the measurements would have to be further defined. It appears that a compete definition of each measurement (calculation element, mathematical formulation) would make the research work and the information processing appreciably easier and thereby improve its operationalization at the local level.

Considering the resources available to us and the information systems which we are developing, we were in a position to observe that the implementation of such an indicator model would be difficult to implement on the short term (two to three months).

Its cost is not easy to assess as collecting the data alone generates work time for other municipal departments and external agencies.

COMLE and Local Concerns

COMLE perceives the quality of life concept from a prospective of sustainable development inspired by new ideas in the field of health. It stipulates that the socio-economic and environment factors are fundamentally intertwined. It defines a viable city by its components of economic vitality, social well-being and environmental integrity.

Faced with our local concerns, the model appears to us to provide supplementary elements to questions relating to knowledge of the outside environment. Our concerns are more closely linked to the identification of trends which influence the environment and focus on the study of the city's (and its components) position in the region.

These concerns lead us to perceive social, economic and environmental realities in a dynamic fashion. The indicators which we develop reflect both the spatial (the way territories are divided up, spatial movements) and the temporal dimensions.

In developing the strategic plan, we used a trend indicator model which aimed essentially at identifying major trends which may influence the development of the city in terms of demographics, economics and employment, the real estate market and the City's financial situation. The identification of the (strategic) factors was effected using an analysis grid developed on the basis of a preliminary interrogation on the themes chosen. This measure was completed by a survey among the City's clients (perception of the City and its components; satisfaction vis-à-vis municipal services).

The picture of the situation resulting from the various analyses made it possible to present an initial diagnosis of the external environment by identifying the strengths and weaknesses as well as the constraints and potential represented by the environment.

Adaptation of COMLE to Quebec City Context

To adapt the COMLE to our local conditions, its structure and composition had to be somewhat modified. Certain sectorial policies go far beyond the responsibilities of our municipality (education, health, social well-being). Illustration 1, in Appendix, presents the structural modifications made in the model as well as the adaptation of the measurements to our local context.

The modifications made in the model are essentially of two types: modifications in certain measurements; elimination of certain sectorial policies (social well-being) and reformulation to reflect their local and regional scopes.

For our local needs, COMLE offers an interesting operational framework. To make it correspond even better to our needs in terms of evaluating the quality of life parameter, an attempt will have to be made to measure the viability components in the City's districts focusing specifically on sectorial policies with local scopes. This would make it possible to monitor the situation on an annual basis.

Modelling and Qualitative Surveys

Throughout the test, we questioned the model's capacity to pick up all the quality of life dimensions. According to us, the model cannot be considered as a substitute for qualitative surveys or any other measures making it possible to define a series of measures in relation to quality of life issues. This is due to the fact that the perceptual dimension associated with needs and with individual satisfaction vs. their immediate environments are not picked up by the model.

As such, we do not have qualitative indicators to compare with the model's measurements. Our planning experience leads us, however, to consider modelling as being more of a basic tool helping to raise a series of preliminary questions which have to be completed and/or updated by survey data.

The City's client survey conducted under the strategic plan is an example of this. This survey made it possible to update the information collected in a preceding survey and to find out the degree of satisfaction and the attitudes and feelings of the population vs. the municipality's services in their districts (public security, environment, housing, etc.)

COMLE and Measurement of Quality of Municipal Life

The notion of quality of life is difficult to quantify as it means different things to different people depending on their origins, social milieu and aspirations. Considering that people usually seek to meet their needs in line with the model proposed by Maslow (needs pyramid), it is normal that the immediate environment be chosen primarily in terms of their basic needs with the satisfaction of their more intangible needs coming next.

Moreover, life styles differ depending on age group, income level and social needs. Thus certain individuals may seek out highly urbanized environments whereas others will prefer green spaces and the quiet beauty of the countryside.

The model seems to have identified, using all the component sectorial programs, the "critical factors" which may affect the population and, indirectly, the organization represented by the City. The model does include certain sectors, however, over which the City (in Quebec at least) has little or no control (e.g. natural environment, health, education). Similarly, a few sectors (mainly environmental) do not have any indicators.

The indicators chosen produce a relatively comprehensive picture of the external reality (as opposed to its internal reality which is its management performance) of a municipality at a particular point in time.

Utility of Model vs. Municipal Processes

The model serves to supplement existing measuring systems by incorporating the idea of monitoring the way the City's external environment is evolving.

As is the case for any other model or system of indicators, this model is pertinent in that the monitoring element ensures tracking of the indicators over time.

On the other hand, the City cannot act directly through support measures except as concerns

certain sectorial entities. Thus, the City has practically no means of action for "employment/commerce and education" sectorial programs. Monitoring these areas could prove interesting but could not translate into direct measures (job creation programs, for example).

As for the sectors of "local responsibility", Quebec City already had a certain number of indicators covering most of the concerns contained in the COMLE model considering its own concerns in terms of long term planning and monitoring of its environment.

It seems important that we stress that it is essential for any model to attain a balance between the number of indicators monitored and concerns involving upper management in terms of long term orientations. Thus, even if much data is monitored, compiled and interpreted, it is still vital, if the model is to prove useful, that the indicators be chosen in line with the concerns of the local authorities so that the data does not end up being "drowned" in a sea of interesting but useless information in terms of decision making. This means that there should thus be a regular exchange of information between the local authorities and the analysts so that the latter can adjust the data types to correspond to that desired by the elected officials.

Regular monitoring of the indicators may be integrated in the municipality's long term planning system. Such monitoring would be of no use for the short term processes or systems considering that the movement of most of these indicators is only perceptible over relatively long periods.

The model is unique in that it reflects the multiple facets to be taken into consideration and the interrelations between the latter. Due to this, it can be of assistance in formulating a holistic approach to the living environment. To do so, however, it will be necessary to diffuse this approach as well as the data making up the model so that the people involved can become aware of the components, how the latter evolve and their interpretations.

Use of Model to Formulate Resource Allocation Policies

The model will prove useful but as an extra, as opposed to the prime tool, used in allocation resources. Other tools such as the systematic assessment of municipal programs and their impacts and, also, the optimization of resources, are necessary to ensure that resource allocation is effected efficiently and effectively.

The other limitation of the model, but which can be considered when viewed from another perspective as an enhancement, is that it "measures" dimensions beyond the control of local action and which thus cannot be undertaken as direct measures by the City. On the other hand, the model becomes useful in terms of setting up "round tables" with representatives from all the stakeholders involved. (school boards, CRSSS, CLSC, etc.) and the formulation of various presentations to be made to other levels of government.

Conclusion

Globally, the COMLE may prove practical in our municipality insofaras most of the measurements which it proposes to make are available and accessible. It serves to further refine, as it were, measurement systems which are already in place and it will likely be useful as an extra monitoring tool vis-à-vis the external environment. The model seems promising in that the concepts underlying it represent a new outlook on development and the issues which it raises seem promising.

Moreover, we observed that a complete definition of the measurements would simplify use of the model. In addition, the development of an interpretation grid for the results made up of base criteria would allow municipalities to rank themselves as to their respective quality of life levels. Lastly, it would be appropriate that the notion of quality of life be measured on a smaller spatial scale, in the very districts within the cities.

Over the next few months, we intend to disseminate the results of the modelling exercise and continue the reflection already underway. In

this sense, we anticipate integrating the model in our computer systems so that it becomes a practical research and planning tool useful in our activities.

Adaptation of COMLE for Quebec City

List of specific measurements added to the model

Housing

Average first-time buyer house price

Family income required for first time buyers

No. of direct jobs in residential construction sector

No. of units renovated

Value of renovation permits

Employment/Commerce

Household income per capita

Natural Environment

No. trees per resident

Indicator Sheets

Table A-2
Housing

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Economic Vitality							
Housing							
1. Units built per year		E	E				
2. Value of building permits		E	E				
Social Well-Being							
Affordability							
1. % of tenants with rents exceeding 30% of income		E	E				
2. % homeowners with housing expenses > 30% of income		E	E				
3. Average price of services residential lots		D					L
Livability							
1. Average no. of people/room			E				
Quality							
1. % of units needing major repairs		D					L (1981)
Accessibility							
1. Waiting time for needy		D					
Environmental Integrity							
Density							
1. Population density		E					
2. Density gradient		D					
3. Average lot size		E					L

E = Easy D = Difficult L = Lacking

Table A-3
Land Use

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Economic Vitality							
Employment							
1. Quality of vacant serviced lots for commercial and industrial use		L					
2. Average approval time for building permits		E					
Affordability							
1. Average cost of services commercial and industrial lots		D $/PI2					
2. Average cost of serviced residential lots		D					L
3. Lot levy							L
Social Well-Being							
Proximity							
1. Average distance from green spaces/parks		D					
2. Difference in relation to green spaces/parks		D					L
3. % households within 1km of playground, primary school, local services							L Local Services
Availability							
1. Number and area of parks and recreational space by resident		E					
Variety							
1. Average length of block		E					
2. Index land use mix		E					
3. Mix of building ages, dwellings only	E	E	E				
Environmental Integrity							
Density							
1. Number of units /hectare	E	E	E				

E = Easy D = Difficult L = Lacking

Table A-4
Transportation

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Economic Vitality							
Availability							
1. % public expenses allocated to urban transit including infrastructure		E					
2. Street maintenance cost per resident per year		E					
Employment							
1. % population living and working in the city		E					
Social Well-Being							
Availability							
1. Distance or travel time for urban transit system						D	
2. % of street kilometres served by urban transit system							X
Equity							
1. Urban transit system for disabled							L
Security							
1. No. crimes in urban transit system							X
Environmental Integrity							
Energy Conservation and Pollution							
1. Licensing of automobiles per resident						D	
2. % population using urban transit						D	

E = Easy D = Difficult L = Lacking

Table A-5
Natural Environment

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Economic Vitality							
Availability							
1. Particles suspended in air		D					
2. NO_2, SO_2 and CO_2 concentrations in atmosphere					D		L (CO_2)
3. Quality of water							L
Resource Consumption							
1. kg waste material per resident per year		E					
2. Volume of urban waste material produced by industrial sectors		E					
3. % urban waste material recycled and marketed		E					
Resource Conservation							
1. % land area kept in natural state		E					

E = Easy D = Difficult L = Lacking

Table A-6
Employment and Commerce

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Economic Vitality							
Availability of Capital							
1. Federal and provincial investment in municipality		E					
2. Household wealth (HIFE)							L
3. Incidence of low income	E	E	E				
Employment							
1. Unemployment rate	E	E	E				
2. Average annual salaries	E	E	E				
3. Total number of vacant positions in local district							X
4. % skilled, semi-skilled and unskilled vacant positions							X
5. % available clerical-sales, managerial or professional jobs vacant							X
Cost of Living							
1. Cost of living index					E		
Level of Commercial Activity							
1. Retail sales by employee		E	E				
2. Net variation of number of business establishments per capita		E	E				
Variety							
1. Number of retail establishments per capita		E	E				
2. Department stores per capita		E	E				
3. Shopping malls per city		E	E				
4. % labour force population 15 years + working in 8 major sectors		E	E				

E = Easy D = Difficult L = Lacking

Table A-6 cont'd
Employment and Commerce

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Social Well-Being							
Employment Equity							
1. Minority group participation rates (youth, women, men)		E	E				minorities
2. % jobs full time		E	E				
3. % labour force population unionized					D	D	
4. Women's unemployment rate		E	E				
5. Men's employment rate		E	E				
6. Youth unemployment rate		E	E				
Income Equality							
1. Average weekly wage - men		E	E				
2. Average weekly wage - women		E	E				
3. Average professional earnings as ratio of average earnings							L

E = Easy D = Difficult L = Lacking

Table A-7
Health

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Social Well-Being							
Availability							
1. Number of hospital beds per resident						E	
2. % hospital beds for short term and chronic care per resident						E	
3. Number doctors per resident						E	
4. Number community health care centres or beds per resident						D	
5. Number public health workers per resident						D	
Frequency							
1. Infant death rate					E		
2. Adjusted death rate					E		
3. Rate of suicide					F		
4. Worker compensation claims							X

E = Easy D = Difficult L = Lacking

Table A-8
Education

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Social Well-Being							
Quality							
1. Student/teacher ratio at primary and secondary levels					D		
2. Education expenses by school board					D		
3. Drop-out rate at secondary level					D		
Availability							
1. Number primary, secondary schools		E					
2. Number post-secondary schools		E	E				
Variety							
1. Number (public and private) school boards		E	E				
2. % and type of additional teaching services							L
3. % pupils in special education						D	
4. % pupils in immersion						D	
Level Reached							
1. % population 20-34 years old without secondary school diploma							L
2. % population 25 years + with university diploma							L
3. % population 25 years + with college diploma							L

E = Easy D = Difficult L = Lacking

Table A-9
Recreation

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Economic Vitality							
Availability							
1. Expenses per capita for parks and recreation		E					
Social Well-Being							
Availability/Number/Resident							
Sports							
1. Swimming pools		E					
2. Tennis courts		E					
3. Arenas, curling rinks, golf courses		F					
4. Seats for spectators							L
Recreation							
1. Local bars		E					
2. Bowling alleys, bingo halls, amusement areas		E					
3. Theatres and cinemas			E				
4. Restaurants		E					
5. Shopping malls depending on type							X
Clubs							
1. Sport and recreation clubs							X
2. Youth clubs							X
3. Social clubs							X
Others							
1. Library books		D					
2. Museums and art galleries			E				
3. Symphony orchestras, opera and dance companies			E				
Environmental Integrity							
Energy Conservation							
1. Number and area of park and recreational land per resident							L

E = Easy D = Difficult L = Lacking

Table A-10
Public Security

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Economic Vitality							
Availability							
1. Public expenses on police		E					
2. Expenses by local authorities for fire protection per resident		E					
Social Well-Being							
Availability							
1. Population per police officer		E					
2. Number of firefighters per resident		E					
3. Classification of community in terms of fire protection		E					
Variety							
1. Number, scope of security services							L
Incidence							
1. Traffic accidents per resident		E					
2. Crime rate (violent crimes)		E					
3. Crime rate (crimes against property)		E					
4. Average annual losses through fire: dollars per resident		E					

E = Easy D = Difficult L = Lacking

Table A-11
Social Well-Being

SPECIFIC MEASURES	AVAILABILITY						
	INTERNAL			EXTERNAL			
	DISTRICT	CITY	REGION	DISTRICT	CITY	REGION	NOT AVAILABLE
Economic Vitality							
Employment							
1. Average weekly unemployment rate							X
2. Number of social welfare cases					E		
Social Well-being							
Availability							
1. Annual social welfare expenses							L
2. Number of social agencies per resident							L
Variety							
1. Scope of social service agencies							L

E = Easy D = Difficult L = Lacking

Indicator Sheets — Quality of Life Indicator COMLE Model

Table A-12
Housing

Specific Measures	Data	T.U.	Year
Economic Vitality			
Employment			
1. Units built per year	1,179	City	1991
2. Value of building permits	89,000,000	City	1991
Social Well-Being			
Affordability			
3. % of tenants whose gross rent exceeds 30% of income	31.4	City	1986
4. % of homeowners whose gross housing expenses exceed 30% of income	9.6	City	1986
5. Average income required to become homeowner	33,680	Region	1986
6. Average price of first time buyer house	83,340	Region	1986

Description

1. The number of units built per year is calculated based on residential construction permits issued in 1991
2. The value of construction permits is that of the units created (new units)
3. % Gross rent >= 30% of household income

3 and 4. Number of tenant households containing structly family members

4. Principales dépenses du propriétaire > = 30 % du revenu

5 and 6. For the period from July to December 1992

Source

3 and 4. Statistics Canada 1986

5 and 6. Quebec City Urban Community Land Development Dept.

5 and 6. CMHC

Comments

1 and 2. In spite of a difficult economic context, Quebec City was successful in attracting investments in the order of nearly $90 M in the residential sector by creating over 1,100 new units.

1 and 2. To fully understand the job creation capacity, the renovation component has to be taken into consideration and the number of jobs in the construction sector measured.

3 - 6 Tenant financial capacity in Quebec City appears problematical for a large number of households. For homeowners, the situation is different as most of the latter spend under 30% of their incomes on housing.

3 - 6 The shelter cost to income ratios are measurements more directly associated with household financial capacity. We believe that average income required and house prices offer more potential in terms of measuring housing affordability.

Table A-12
Housing - cont'd

Specific Measures	Data	T.U.	Year
Social Well-Being - cont'd			
Liveability			
7. Average number of people per room	0.5 0.5	City Region	1986 1986
Quality			
8. % units requiring major repairs	7.65	City	1991
Accessibility			
9. Waiting time for needy	20 months	City	1992
Environmental Integrity			
Density/Design			
10. Population density (hectares)	91.1	City	1991
11. Density gradient	–	City	1991

Description

8. The percentage of units requiring major repairs is only available for the year 1981. It is calculated based on the number of private units occupied which was 69,936 as of 1981.
9. Waiting time for needy is the average number of months it takes before obtaining a "HLM" unit managed by the Quebec City Municipal Housing Board. It is calculated for all types of households.
10. Total population in 1991 over the area used for residential purposes (in hectares).

Source

7. Statistics Canada 1986, Census profile sample 20 %
8. Statistics Canada, 1981.

Comments

7. As a measurement of liveability, the average number of people per room is a good indicator of population density.
7. In Quebec City, as is the case in the region as a whole, a couple lives in four rooms. This population density would have to be measured by district to get a good indication of liveability in the various urban sectors.
8. The actual quality of the housing stock can only be partially assessed using this measurement.
8. In our opinion, more emphasis should be put on the use of surveys and/or physical assessments of the housing stock to measure the quality component and renovation needs.
9. It takes an average of 20 months to obtain a HLM unit in Quebec City. This waiting time may vary depending on type of client group (seniors).
10. Quebec City urban fabric offers areas with very low densities.

Table A-13
Land Use

Specific Measures	Data	T.U.	Year
Economic Vitality			
Employment			
1. Area of vacant serviced lots available for commercial and industrial purposes (square metres)	4,942,203	City	1992
2. Average approval time for building permits	15 days	City	1992
Affordability			
3. Average cost of serviced commercial lots industrial serviced lots (sq. ft.) residential serviced lots (sq. ft.)	$6.00 $2.75 $5.00	City City City	1991 1991 1991
4. Average cost of street openings per linear metre	$1,200	City	1991
Social Well-Being			
Proximity			
5. Average distance from green spaces/parks			1992
6. Percentage of households within one kilometre of: playground primary school	92.4 %	City	1992

Description

1. Vacant area available for residential purposes in square metres.
2. Average time between filing of application for permit and its approval.
3. Average cost of serviced lots per square foot. Lots serviced by water supply and sewer systems.
4. Average cost of street opening per linear metre.
6. Number of units within one kilometre out of the total number of units (unit = household).

Source

1. Land Development Department, SATCUQ, 1991.
2. Urban Planning Department, Permit Division.
4. Urban Planning Department, Quebec City.

Comments

1 and 2 The actual quantity of vacant lots is not available. The vacant area as observed does show the city's great capacity for attracting new investors.

Table A-13
Land Use - cont'd

Specific Measures	Data	T.U.	Year
Social Well-Being cont'd			
Availability			
7. Areas of parks and recreational space per resident	0.004		1991
Variety			
8. Average length of blocks (metres)	300 to 400 m	City	1993
Index of land use mix :			
Residences	19%	City	
Businesses / services	5%		
Industries	4%		
Institutions	3%		
Others	16%		
Unit age combination (1986):			
Pre 1946	33.4%		
1946-1960	21.4%		
1961-1970	17.7%		
1971-1980	19.6%		
1981-1986	7.9%		
Environmental Integrity			
Density			
9. Number of units per hectare	46.20	City	1992

Description

7. Area of parks and recreational space is measured in hectares.
7. Takes in properties belonging to governments, school boards and/or schools and private community agencies.
8. The average length of blocks or neighbourhood units varies from one district to another. The measurement presented here is an average of all lengths.

   Distribution in percentage of land use areas.

   Percentage of units built by construction period.
9. Number of units registered on Quebec City Urban Community assessment role in 1992 over are caused for residential purposes.

Source

7. Recreational and Community Life Deparrtment, Quebec City.
8. Urban Planning Department, Quebec City.
9. Statistics Canada, 1986.
9. SATCUQ

Comments

7. Total area of parks and recreational space is 686.58 hectares. This represents 15.4% of the total urbanized area within the territory of Quebec City.

Table A-14
Transportation

Specific Measures	Data	T.U.	Year
Economic Vitality			
Availability			
1. % public expenses allocated to urban transit including infrastructure	3.37 %	City	1991
2. Street maintenance expenses by resident per year	$266	City	1991
Employment			
3. % of population living and working in the city	37.1 %	City	1991
Social Well-Being			
Availability			
4. Percentage and kilometres served by urban transit system	27.3 %	CUQ	1991
Equity			
5. Urban transit for disabled	199,591	CUQ	1992
Environmental Integrity			
Energy Consumption and Pollution			
6. Number of vehicles per resident	0.43	City	1991
7. Percentage of population using urban transit	18 %	City	1991

Description

1. City's contribution to its urban transport expenses for 1991, based on City's tax potential ($9,395,954) divided by total operating budget.
2. All expenses entered in "Transportation" function excluding those for urban transit in the operating budget, divided by the 1991 population (165,517).
3. Number of internal trips (Quebec City territory) for work reasons.
4. Length in km of Quebec City Urban Community's urban transit network in relation to the highway network (600 km / 2,200 km).
5. Number of disabled people transported.
6. Sum or total automobiles per household in relation to total population
7. Number of people using urban transit out of total population.

Source

1. MAM (Dept. of Mun. Affairs), financial report, 1991.
3. Departure Destination Survey, Quebec City Urban Community.
4. Land Development Department, Quebec City.
5. Annual Report "Adapted Transportation in Metro Quebec City Inc.", 1992.

6 and 7. Departure Destination Survey - Transportation Department - Quebec City Urban Community, 1991.

Comments

1 and 2. Urban transit expenses are divided up in terms of fiscal capacity and not based on use, population or other criteria.

1 and 2. The assessment of capital expenses does not measure the actual effort involved as it ignores the "commercial structures and business establishments" component. A better indicator would be based on the number of square kilometres of street and sidewalk space to be maintained.

Table A-15
Natural environment

Specific Measures	Data	T.U.	Year
Environmental Integrity			
Availability			
1. Particles suspended in air (mg/m3)	43	City	1992
2. Concentrations for :			1992
$N0_2$	1.8 PPCM	City	
$S0_2$	0.5 PPCM		
$C0_2$	0.5 PPCM		
3. Water quality - turbidity :	0.4	City	1992
total coliform bacteria	<2	City	
fecal coliform bacteria	<1	City	
4. Number of trees per resident	.39	City	1992
Resource Consumption			
5. Kg of waste per resident per year	354 kg	City	1991
6. Volume of urban waste produced by the industrial sectors (tons)	40,425	City	1991
7. Percentage of urban waste recycled and marketed	2.1 %	City	1991
Resource Conservation			
8. % of land conserved in natural state	26 %	City	1991

Description

1. Data on suspended particles in the air represent the average of 7 sampling stations located in the core districts.
2. Data on $N0_2$, $S0_2$ and $C0_2$ concentration come from the sampling station located in an urban zone.
3. Number of trees estimated for all the territory within the Quebec City limits.
5. Volume of waste is measured for the residential sector.
6. Takes in commercial, institutional and industrial sectors.
7. Calculated based on all waste produced in the municipality, i.e. 536,000 tons.
8. Area of non-urbanized land: forests, woodlands and agriculture.

Source

1 - 3. Public Works Department Quebec City.
8. SATCUQ, 1991.

Table A-16
Employment and Commerce

Specific Measures	Data	T.U.	Year
Economic Vitality			
Availability of Capital			
1. Federal and provincial investments in the municipality (in millions of dollars)	9.1 M	City	1991
2. Incidence of low income (%)	15.6	Region	1991
3. Household income per capita (average income)	42,164	Region	1991
Employment			
4. Unemployment rate	9.0	Region	1991
5. Average annual salaries	24,314	Region	1991
6. Number of social welfare cases	15,627	City	1991
Cost of Living			
7. Cost of living index	1.8 %	Region	1991

Description

1. Grant provided by the provincial government to the municipality under a Department of Cultural Affairs-City agreement to conserve urban heritage. Grant provided on basis that Quebec City was provincial capital.
2. Calculate for the whole population.
3. For all private households.
4. Unemployment rate is calculated monthly. It represents an annual average.
5. Annual average salaries apply to people with full time employment earnings.
6. Total number of single adults and families benefitting from social assistance in July 1991.
7. Annual average: consumer price index.

Source

2. Statistics Canada, 1991 - cat. 93-331.
3. Statistics Canada, 1991 - cat. 93-331.
4. Statistics Canada.
5. Statistics Canada, 1991, cat. 93-331.
6. Department of Income Security
7. Bureau de la statistique du Quebec.

Table A-16 cont'd
Employment and Commerce

Specific Measures	Data	T.U.	Year
Economic Vitality			
Variety			
8. Number of retail businesses by resident	0.04	City	
9. Shopping malls per city	15	City	
10. % labour force by activity sector			
Primary industries	0.7 %		
Manufacturing	8.3 %		
Construction	3.5 %		
Transportation, storage, communication	6.0 %		
and other utilities	16.9 %		
Finance, insurance and real estate	6.6 %		
Government service industries	17.9 %		
Level of Business Activity			
11. Retail sales per capita	$5,135	City	1991
12. Net variation in number of business establishments of places of business From 1984 to 1987	283	City	1991
Social Well-Being			
Employment Equity			
13. Participation rate: women	48.7	City	1986
men	71.8	City	
youth 15-24 years	67.5	City	
14. % full time jobs	–	–	1986
15. Unemployment rate: men	13.9	City	1986
women	15.2	City	1986
youth 15-24 years	21.0	City	1986
Income Equity			
16. Average weekly salaries			
men	563.59	Region	1991
women	349.94	Region	1991

Description

9. Takes in the district as well as the regional commercial centres.

13 - 15. Calculate using population 15 years old +.

15. Average employment income divided by 52.2 work weeks.

Source

10. Statistics Canada, 1986.

11 and 12. Office municipal de développement économique de Quebec.

13. Statistics Canada, 1986

15. Statistics Canada, 1991, cat. 93-331.

Table A-17
Public Services: Health

Specific Measures	Data	T.U.	Year
Social Well-Being			
Availability			
1. Number of hospital beds per 1,000 residents	36.8	Region 03	1991
2. % hospital beds for short stays and for chronic care per resident	60%		1991
3. Number of doctors per 1,000 residents	13.4		1991
4. Number of community centres per 1,000 residents	0.42		1991
5. Number of public health employees per resident	4.15		
Incidence			
6. Infant mortality rate (0-4 yr.) for 100,000 residents	9.94	City	1990
7. Mortality rates adjusted by age for 100,000 residents			
Men	918.59	City	1990
Women	659.86	City	1990
8. Rate of suicide (for 1,000)	1.86	City	1990

Description

1 - 5. Data on availability of health services comes from the Department of Community Health of Saint-Sacrement Hospital. Establishments are compiled on a regional basis. Ratios are calculated on the basis of the population of Quebec City which is 167,520.

1 and 2 Mortality rates are adjusted in terms of population breakdown by age and sex for Quebec City in 1991. They are calculated for 100,000 residents.

8. Suicide rate is obtained as a ratio of suicides out of total number of deceased out of 1,000.

Table A-18
Public Services: Education

Specific Measures	Data	T.U.	Year
Social Well-Being			
Quality			
1. Pupil-teacher ratios at primary and secondary levels			1991
2. School drop-out rate			1991
Availability			
3. Number of schools:			
primary	42	City	1990
secondary	20	City	1990
4. Number of post-secondary teaching establishments	7	City	1990
Level Attained			
5. % of population without secondary school diploma	16.3	City	1986
6. % population with university diploma	12.0	City	1986
7. % population with college certificates	15.4	City	1986

Description

3. Number of establishments and/or premises used for educational purposes at primary or secondary level.
4. Takes in college and university institutions.
   Total population 15 yr. and older.
5. 9th to 13th year without secondary school certificate.
6. Other non-university studies with certificate.
7. University studies - with diploma.

Source

3 and 4. Quebec City Urban Community, 1990.

Table A-19
Public Services: Recreation

Specific Measures	Data	T.U.	Year
Economic Vitality			
Availability			
1. Expenses per resident for parks and leisure	68.54	City	1991
Environmental Integrity			
Energy Conservation			
2. Number and area of parks and recreational area by resident.	0.004	City	1991
Social Well-Being			
Availability/Variety			
3. Sport equipment per resident: swimming pools, tennis courts, arenas, seats for spectators	0.003	City	1991
4. Recreational equipment by resident: local bars, curling rinks, bingo, amusement areas	23,405	City	1991
5. Clubs by resident: sports and leisure, youth, social clubs	0.002	City	1991
6. Others per resident: library books, museums and art galleries, symphony orchestras and opera and dance companies.		See attached sheet	1991

Description

1. Takes in expenses for territorial embellishment; administration of recreational activities; administration of recreational equipment; arenas and skating rinks; community centres; parks and playgrounds; swimming pools; beaches; marinas; port and open air activities.
2. Area of parks and recreational space is measured in hectares.
2. Takes in properties belonging to governments, school boards and/or schools and private community agencies.
3. Takes in interior and exterior swimming pools, exterior tennis courts and arenas.
5. Takes in recreational agencies, social clubs and youth clubs.

Source

1. Planning Department.

Comments

2. Total area of parks and leisure space is 686.58 hectares. This accounts for 15.4% of the urbanized land area within the Quebec City limits.
2. This measurement is used as an indicator of the availability of the social well-being land use component.

Table A-20
Public Services: Crime and Public Security

Specific Measures	Data	T.U.	Year
Social Well-Being			
Availability			
1. Population per police officer	493	City	1991
2. Number of firefighters per resident	1/720	City	1991
3. Classification of the community in terms of fire protection	2	City	1991
Economic Vitality			
Availability			
4. Public expenses for police ($thousands)	33,198.4	City	1991
5. Local administration expenses for fire protection ($thousands)	18,357.8	City	1991
Incidence			
6. Traffic accidents by resident	0.043	City	1991
7. Crime rate (violent crimes) in %	8.97	City	1991
8. Crime rate (crimes against property)	63.21	City	1991
9. Average annual losses through fire $ per resident	44.77	City	1991

Description

4. All of costs associated with the provision of public security services including support services, maintanance costs for vehicles and buildings, school patrol, parking officers.
5. All the costs associated with fire protection including maintenance of buildings and vehicles and the Fire Commissioner's Office.
6. The number of traffic accidents is recorded based on reports completed by the Police Department (does not include accidents settled on the spot by the parties involved).
7. Calculate out of the total number of crimes.

Source

1 - 3. Police Department, Fire Prevention Department.

4 and 5. Financial Report 1991, M.A.M. (Dept. of Municipal Affairs).

6 - 9. Police Department, Quebec City.

6 - 9. Fire Protection Department, Quebec City.

Comments

4 and 5. Starting in 1991, Quebec City provided public protection for other cities to reduce indirect costs.

Recreation and Culture

Quebec City represents a major cultural pole in Canada. It offers a wide choice of activities and entertainment within the reach of everyone: cultural events, theatre, movies, visits to historic sites and museums, sports and open air activities and nature observation.

Shows

Throughout the year, music, theatre, dance, opera, films and shows of all sorts are presented in movies theatres and halls.

Among the main attractions is the Colisée (Colliseum), where the Quebec Nordiques used to play before moving to Colorado. In addition, it is the site for international artists and large scale productions.

As for "le Grand théâtre de Quebec", it is home to the symphonic orchestra, the Trident Theatre, the Musical Club and the Quebec Opera.

In summer, certain public areas in Quebec City are used to offer outdoor shows : the City Hall gardens, le Pigeonnier, la place D'Youville and l'agora du Vieux-Port which is located on a breathtaking site, near the River. This theatre, quite original in design, has 5,500 seats and can accommodate up to 10,000 spectators. Movie lovers are also spoiled in Quebec City. There are six movie theatres which can present a total of 19 films at the same time for all tastes as well as repertory films. First showings are in French and in English.

Libraries

The Gabrielle-Roy library is the heart of the City's network of public libraries. Located in the Place Jacques-Cartier complex, it meets the needs of residents in terms of information, recreation and culture. Thus, the printed word in its various forms is supplemented by other media such as films, records and microfilm.

These libraries present, in premises conducive to cultural animation, exhibits, cinematographic projections, shows and fairy tales for children. These activities are in addition to those traditionally offered by libraries.

The Quebec City library, in 1988, had nearly 1.3 million visitors. In the Fall of 1989, a new branch was added: the library at "le Collège-des-Jésuites. This brought to 11 the number of libraries in the whole network.

Museums

In addition to presenting prestigious exhibits, the museums in the City are continually adding to their permanent collections of Quebec, Canadian and international works of art.

Most of the items in Le Musée du Quebec represent Quebec art from the 17th century to today. This specialized collection is recognized as one of the most comprehensive in North America.

In addition to promoting Quebec art, this state museum ensures the presence of international art. Moreover, in 1988, it showed masterpieces of modern painting from the Prague Museum and, in 1986, it showed the collections from two Soviet museums specialized in impressionistic painting.

Le Musée de la Civilisation is an internationally renowned state museum. Inaugurated in 1988, it won the Canadian Excellence in Architecture Award and, in 1989, the Innovation Award given out by the "Office du tourism et des congrès", a department within the Quebec City Urban Community.

A real museum of human activity, it focuses particularly on human thought and sciences. It develops the contents of its exhibits around five major themes; the body and human adaptation mechanisms, matter and resources, society and the human environment, language and communication, thought and the imaginary.

Main Locations For Shows in Quebec City, 1989		
Location	**Shows**	**Seating Capacity**
Le Colisée de Quebec	various shows	15,448
L'agora du Vieux-Port (summer only)	various shows	5,500
Le Grand théâtre de Quebec	various shows	2,450
Le Palais Montcalm	various shows	1,367
L'institut canadien de Quebec	various shows	637
L'Implanthéâtre	Theatre	280
Le théâtre du Petit-Champlain	various shows	200
Le théâtre de La Bordée	Theatre	184
Source : OMDEQ		

Municipal Libraries in Quebec City, 1989	
Bibliothèque Gabrielle-Roy	350, rue Saint-Joseph Est
Bibliothèque du Collège-des-Jésuites	1120, boulevard Saint-Cyrille Ouest
Bibliothèque La Canardière	1601, chemin de la Canardière
Bibliothèque Les Saules	2035, boulevard Masson
Bibliothèque Montcalm	1310, rue Garnier
Bibliothèque Neufchâtel	4060, rue Blain
Bibliothèque Saint-Albert	5, rue des Ormes
Bibliothèque Saint-André	2155, boulevard Bastien
Bibliothèque Saint-Charles	400, 4e Avenue
Bibliothèque Saint-Jean-Baptiste	755, rue Saint-Jean
Bibliothèque Vieux-Quebec	37, rue Sainte-Angèle
Source: Ville de Quebec (Bibliothèque Gabrielle-Roy)	

Main Museums in Quebec City, 1989	
Musée de la Civilisation	Permanent collection, temporary exhibits; exhibits focused on human activity
Musée du Quebec	Permanent collection, temporary exhibits; Quebec art, international art, paintings, sculptures, works on paper, silver and gold plating
Musée du Séminaire	Permanent collection, temporary exhibits; oriental and Quebec art, European paintings, lay and religious
Musée des Ursulines	Permanent collection; Ursulines heritage, pre-Wolfe period, from 1639 to 1757
Musée des Augustines de l'Hôtel-Dieu	Permanent collection history of Hôtel-Dieu de Quebec, first hospital in North America
Source: Ministère des Affaires culturelles	

Cross Country Skiing Quebec City Area, 1989				
	Length	**Trails**	**Heated Shelters**	**Night Skiing**
Centre de plein air Le saisonnier	216 km	28	•	
Centre L'éperon	216 km	22	•	•
Parc du mont Saint-Anne	181 km	19	•	
Centre de ski de fond Charlesbourg	180 km	22	•	
Centre de plein air Le refuge	135 km	15	•	
Camp Mercier	132 km	10	•	
Club Mont Tourbillon	115 km	13	•	•
Source: Office du Tourisme et des congrès de la Communauté Urbain de Quebec				

Alpine Ski Centres Quebec City Area, 1989				
	Height	**Ski Lifts**	**Trails**	**Lighted**
Parc du Mont Sainte-Anne	625 m	12	50	12
Station touristique Stoneham	420 m	10	25	15
Centre de ski Le relais	224 m	7	24	24
Mont Saint-Castin	175 m	6	14	14
Source: Office du Tourisme et des congrès de la Communauté Urbain de Quebec				

APPENDIX B

A PILOT TEST OF COMLE IN TORONTO

Healthy City Toronto
Healthy City Office
July 1993

Introduction

'Quality of Life' is a term that is used by planners, decision makers and lay persons, with a variety of interpretations and meanings. The operationalization of the term for purposes of evaluation, however, remains ambiguous at best. In this time of rapid global changes, how can we tell if conditions are improving? or, more specifically, how can municipal decision makers and the citizens to whom they are accountable, develop a picture of the direction of trends in their communities?

The development of quality of life — or sustainable development or healthy city — indicators presents an opportunity to answer some of these questions. Indicators, when understood within an agreed upon framework, are an important tool for citizens and decision makers to assess and monitor the quality of life in cities.

In 1992, the Institute for Social Research at York University prepared a feasibility analysis for modelling quality of life indicators at the municipal level in Canada for The Centre for Future Studies in Housing and Living Environments of the Canada Mortgage and Housing Corporation (CMHC). This analysis yielded a model, the Community Oriented Model of the Lived Environment (COMLE), and a set of measures for assessing the quality of life in cities.

The COMLE model is based on the conceptual framework of livability provided in the 1992 Draft Official Plan for the Municipality of Metropolitan Toronto. This 'Healthy City' framework is based on the realization that our health depends on the quality of the social, physical and economic environment, and on equal access to the opportunities they provide.

In 1993, CMHC involved three cities — Quebec City, Fort McMurray and Toronto in a pilot test of the model. Toronto was selected as a participant in this pilot test because the city is the birthplace of the Healthy Communities model, and an important component of the City's Healthy City Project is the development of healthy city indicators. The Healthy City Project has recently released Toronto's first State of the City Report.

The purpose of this paper is to outline the experience of Toronto in this pilot. The paper describes how the test was undertaken, and discusses the applicability of the model to State of the City reporting in Toronto.

Toronto's First State of the City Report

Toronto's first State of the City report is an easy to read, non-technical, journalistic style, report on the current state of the environment, housing, transportation, education, safety, community health and economic health in the city of Toronto. The seven issues in the first report were selected through the synthesis of information views expressed at a variety of community visioning workshops.

The report provides an overview of trends and expectations of these issues, focusing on major problems, successes and initiatives. The report is the beginning of a process of developing indicators for monitoring the city's progress towards achieving the Healthy City goals of environmental sustainability, social equity, and economic vitality.

State of the City reporting is a tool to:

- empower local politicians,
- empower citizens,
- monitor changes in the health of the city,
- provide the community with an opportunity to be involved in monitoring the health of the City, and,
- provide the community with an opportunity to identify research needs.

For Council, the information provides the basis for policy making through an accessible overview of major trends and their implications for Toronto in the future. For the community, the report provides a government document which is readable, and related to their concerns and their visions of what a healthy city should be.

This first State of the City report is the beginning of a process to monitor a series of indicators for assessing the health of the city into the next millennium. Every three years, a new report will update the indicators, introduce new more relevant information and assess the progress that the city has made towards achieving its goals. Specific measures may change in relation to economic, political and social trends. However, because they

are rooted in a vision of Healthy City - a balance between economy, environment and equity - there will be consistency over time.

The State of the City Report is a key component of the Healthy City strategy. By comparing current trends to desired goals, the Report identifies the gaps between the probable future and the preferable future. As such, it provides an opportunity to evaluate the effectiveness of interventions and to plan for new policies, programs and practices.

Methodology

In order to test the applicability of the COMLE model to State of the City reporting for Toronto, the seven issues which were focused upon in State of the City Report were selected as the "sectoral policies/ programme" areas for which indicators were to be developed.

Preliminary 'flow charts' were then developed for each of the seven areas, using the components of livability proposed in the COMLE model, and consistent with the Healthy City model.

At the level of the indicators, the proposed COMLE indicator areas were substituted with the goal areas focused upon in the State of the City Report. This provided the flexibility to introduce measures which were not originally proposed in the COMLE model. The final selection of measures includes, measures which were included in the State of the City Report and measures which would have been desirable for the State of the City Report but for which information was not available at the time. The list also includes a few indicators which were not included in the State of the City Report but which are monitored regularly by the City of Toronto.

Data collection took place following the development of the preliminary 'flow charts'. A series of parameters for each indicator — the ease and frequency of collection, the level of aggregation most appropriate and the source of the information — were also collected. If the data was obtainable through the State of the City Report, it was recorded as it was in the report. If not, if it could be obtained within three weeks time, it was collected, if not, then it was ranked either "difficult to obtain" or "not available".

At the end of the test, the preliminary charts were reviewed and adjusted in relation to the findings, and a detailed description of each measure was provided with commentary.

The City of Toronto: Providing Some Context

Toronto, the capital city of Ontario, is located on the north shore of Lake Ontario. The City was incorporated in 1834 and the first permanent Board of Health was established in 1884. The city's early industrial period began in the 1850s with the development of the railways along the waterfront. Through a series of annexations the city expanded to it's current size at the beginning of this century.

The City of Toronto is an integral part of two larger urban communities: the Municipality of Metropolitan Toronto (Metro) and the Greater Toronto Area (GTA). Metro includes the City of Toronto and five other local municipalities, and has overlapping jurisdiction in some areas with the City of Toronto. Metro is one of 5 Regional Municipalities which make up the GTA. The implications of being within such a large urban region mean that, for example, the City of Toronto is at the centre of the largest labour market in Canada and provides employment opportunities to many people who are not actual residents of the City proper.

The Greater Toronto Bioregion is defined by the Oak Ridges Moraine to the north and the Niagara Escarpment to the west. The lands and waters in this region share particular climatic and ecological similarities.

One in ten Canadians live in the GTA, which has a population of 3.7 million. The population of the GTA has increased by almost 20% over the past fifteen years, whereas the population of the city (currently at 635,000) has decreased by 3.5%.

Key Trends

Current demographic patterns are an essential backdrop to understanding the information which has been collected for this pilot. Three key demographic trends in Toronto strongly affect the city's probable future and the trends which are monitored through the selected indicators.

First, the population is aging. Older people make up an increasing proportion of the population, and

this pattern will become more intense over the next few decades, as the "baby-boomer" generation ages. The special needs of older people will impact the types of services that are in demand, as well as on mix of human skills which will be available for employment.

Secondly, family structures are changing. The traditional image of the family — two parents, a father in the workforce and a mother at home taking care of the children — no longer reflects the reality of family life. More people live alone or with smaller family units than in the past, and many older children return to live with their parents later in life. The number of single-parent families is increasing, and most of these are headed by women, and many of them are poor. The changes mean there will be a greater demand for affordable housing, smaller housing, affordable child care, after-school programs, stroller accessible public transit, and family counselling services.

Thirdly, the city's ethnoracial diversity continues to increase. Over 100 languages and dialects are spoken by Torontonians. More than one-third of Toronto's residents identify a language other than English or French as their mother-tongue. Half of all newcomers to Canada settle in the Greater Toronto Area. This diversity of languages and cultures will provide a serious challenge to service delivery and to the social well-being of the city overall.

Findings

Figures B-1 to B-7 are the 'flow charts' which outline the indicators selected for Toronto. Tables B-1 to B-7 describe and comment on the measure, and provide the data available at the time of the pilot. The State of the City Report provides a more in depth analysis of the findings.

Discussion

Applicability of the Model to State of the City Reporting

In the experience of this pilot, the COMLE model provides a good initial framework for developing quality of life indicators at the local level. The model 'forces' the selection of indicators which are appropriate to the components of livability, and therefore the selection of measures which will contribute to monitoring towards a set of desired goals.

The model is directly relevant to State of the City reporting for Toronto, and would be an effective point of entry for other municipal governments who are attempting similar exercises.

The model, however, is most useful when the built in flexibility it provides is maximized. Toronto entered into the pilot with the understanding of a flexible model. The components of livability were 'fixed', however, the 'sectoral policies', 'indicators' and 'measures' were adapted to reflect the Healthy City Strategy and the State of the City Report.

Organization of the Model

Historically, indicators have been developed and monitored by researchers who 'believe' it is possible to separate the process of conducting research from the intended subject and audience of the information. The COMLE model is organised according to "the sectoral policies and programs... that municipal governments have some responsibility for". As a result, the measures which are identified through the model tend to be measures that municipal governments collect regularly or that are collected nationally or provincially but available at the municipal level. While this regularity is important, it leads to a focus on traditional government management issues, rather than a focus on issues which concern the public.

For example, the public may be concerned about racism in the community or the rise in homelessness, issues which have not been the focus of government data collection, or areas for which an indicator is not readily apparent. At the same time, Toronto collects information on the number of cars that travel across planning boundaries throughout the city. The information that concerns the public, however, is the amount of driving that Torontonians do in their city. By focusing information collection on where City government can make a difference, we may have ignored the opportunity for citizens to become part of the solution.

Identifying the intended audience, and scoping out, at the beginning of the process, the critical

issues for that audience, is therefore crucial if the measures which are eventually selected are to be useful indicators for monitoring quality of life. In other words, if the audience for the information collected is the government worker, policy planner etc..., then the organization of the model along sectoral policy lines may be useful, however, if the audience is the public or the municipal Council (who have a level understanding similar to the public), or if the information yielded is to contribute towards improving the quality of life for the public, then an initial organization which reflects public priorities is crucial.

Balancing the Need for Comparable Data with the Need for Locally Relevant Data

Although the intent of the pilot test was not to compare data from the three cities, the COMLE model recommends a series of measures which if adopted by municipalities across Canada would provide the basis for potentially looking at differences between cities across Canada.

At the same time, it is crucial that cities which use the model reflect upon the applicability of the suggested indicators to issues of importance in their municipality. While this may yield different indicators for different cities, it will provide a more appropriate policy making tool.

Ease of Data Collection

The data collection itself was relatively easy within the fixed time frame, because most of the data had already been collected for the State of the City Report. Initially, however, the process of selecting indicators and narrowing them down was time consuming.

The Section of the 'most appropriate' indicator requires consultation with 'experts' in the field who are familiar with areas under investigation. With a city government as large as Toronto, a substantial amount of time must be allocated towards finding the appropriate persons in the bureaucracy and elsewhere who are collecting information on this wide array of topics, and in consultation with them, selecting the most appropriate information.

Although CMHC initially approached the Planning Departments for their participation in this project, a project of this interdisciplinary nature will, at least in larger municipalities, require the cooperation of many departments and outside agencies.

'Cost' of applying the Model

Because the pilot test of the model for Toronto used the framework and data which had been compiled for the State of the City Report, the cost of pilot test itself was relatively low.

Approximately 35 person days were required to complete the pilot and with relatively little overhead.

The State of the City Report, however, took approximately two years to complete, with the input of about 40 City Hall staff and over 200 community members. Background research for the report included two small external contracts on the topic of indicators. The two years included the development of a framework, the collection and analysis of information, and reaching agreement on the interpretation of the research findings.

The cost of applying the model therefore will vary greatly in relation to the individual input that a municipality is willing to invest into, not only collecting the information, but first, assessing whether the indicators proposed are appropriate, and secondly, reaching agreement on the interpretation and implications of the findings for quality of life.

Input vs Output Measures

Many of the measures proposed through the COMLE model are 'input' measures, that is, where government input can have a direct impact on the outcome of the measurement — for example, the number of police officers. While these measures may be important from a management perspective, an increase or decrease in the measure does not necessarily imply an increase or decrease in quality of life.

From a quality of life or Healthy Communities perspective, however, what is significant is the outcome that these management inputs have - for example, the number of crimes committed. The indicator should directly reflect a component of livability rather than a factor which may or may not influence the 'livability' of the place.

Qualitative vs Quantitative Measures

Many of the City of Toronto variations to the COMLE model are qualitative. As Murdie et al. identify in their report, the COMLE "model does not provide for subjective indicators of economic vitality, social well-being and environmental integrity". Subjective indicators, however, are important to understanding quality of life, and so if the model is to reflect as many aspects of quality of life as possible, it should include indicators which reflect subjective information. This includes subjective information which is measured through quantitative methods such as attitude surveys, as well as qualitative information on quality of life as it is experienced by citizens whose experiences may not be borne out in 'fact'. For example, the State of the City Report includes the results of interviews with a sample of Toronto's citizens.

Murdie et al. the dilemma of the traditionally high cost qualitative data, but the COMLE model does not attempt to resolve the problem. New information technology and modern public opinion investigation and modelling techniques, however, may provide an answer to the long standing qualitative vs quantitative issue. New and creative sampling techniques, such as the use of billing cycles to introduce appropriately designed questionnaires, freer access to public relations data, and strategic placement of interactive information kiosks, may enable 'routine' qualitative data capture. And creative use of computer technology could effectively automate the collection and analysis of the data at a lower cost.

Tying Data Collection to an Information Strategy

A major value of the COMLE model is its focus on data relevant to a City's overall health. The periodic collection of such data not only permits identification and objective analysis of important trends but provides comparison opportunities between cities where such comparison is appropriate and valid.

Much of the COMLE data, including the City of Toronto variant, is strategic to basic city operations. Many municipalities are pursuing progressive information technology strategies that include central data architecture modelling. The City of Toronto is currently engaged in such a study (ITSP). By ensuring that COMLE data is acknowledged in the City's data architecture model, the data collection could be largely automated. The exercise of determining data base inclusion would in itself be interesting, beneficial and productive.

Further, if CMHC, or others, were to invest in appropriate research, a common data model could be developed that would be applicable to a majority of diverse municipalities, large and small, technologically sophisticate or not. And for those less technologically advanced, the model would provide an important impetus to better utilize information technology.

Areas for Further Research

The State of the City Report and the COMLE model rely mostly on data which is easily accessible and already collected in some systematic format. Most of this information is collected in relation to a need to monitor the progress of long standing government initiatives. With a shift towards quality of life and healthy communities, however, we realise that new information will have to be collected.

As we shape our vision of the kinds of cities we want for the future, we are moving away from a growth and consumption centred paradigm to one which is focused on human development. As such, we require new kinds of information to tell us whether we are moving in the right direction.

Some areas for further exploration include (in no particular order):

- neighbourhood satisfaction,
- government responsiveness,
- spatial and group differences for the measures selected,
- empowerment, and,
- investment in human resources.

Conclusion

Toronto's participation in this project provided a good opportunity to validate the experience of the State of the City Report and to investigate the potential of using a model which is based on the Healthy City model in variety of municipal

settings. Clearly, the discussion presented confirms that the model is appropriate and provides a framework for rationalizing data collection at the municipal level in relation to issues which are of importance to citizens. In order for the exercise to be useful for policy analysis, program planning and service delivery in the long term, however, the municipality must be committed to ongoing monitoring of these variables in relation to specific goals and targets.

The components of livability in the model provide the background for the municipalities to develop goals and indicators which are relevant the concerns of their citizens. In order to evaluate whether our cities are becoming healthier, the goals and related targets must be explicitly stated and the information must be collected and monitored over time.

The State of the City Report relied on many one-time studies which have been undertaken over the past several years. The report paints a picture life in Toronto and sets it against a vision of a healthy city. In order evaluate whether we are moving in the direction of this vision, many of these studies will need to be repeated, and some new information will be required. In order to obtain meaningful and useful information in the long term, it will be necessary to invest in the research and monitoring framework required to follow the measures that have been selected. Only then will be able to assess the effectiveness of our interventions.

Figure B-1
Economic Life, City of Toronto Perspective,1983

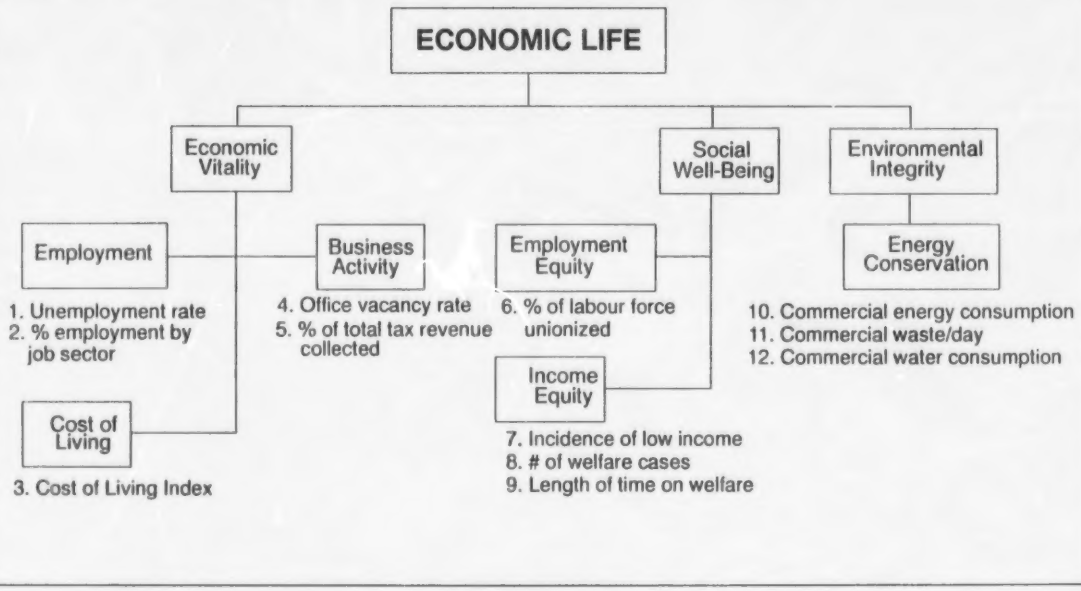

Figure B-2
Environment, City of Toronto Perspective, July 1993

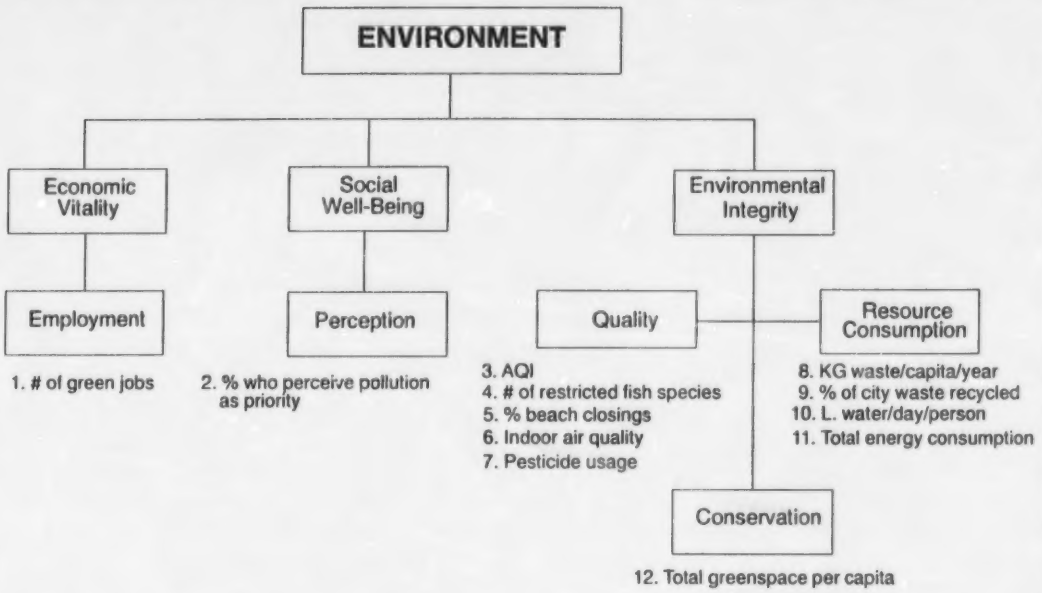

Figure B-3
Community Health, City of Toronto Perspective, July 1993

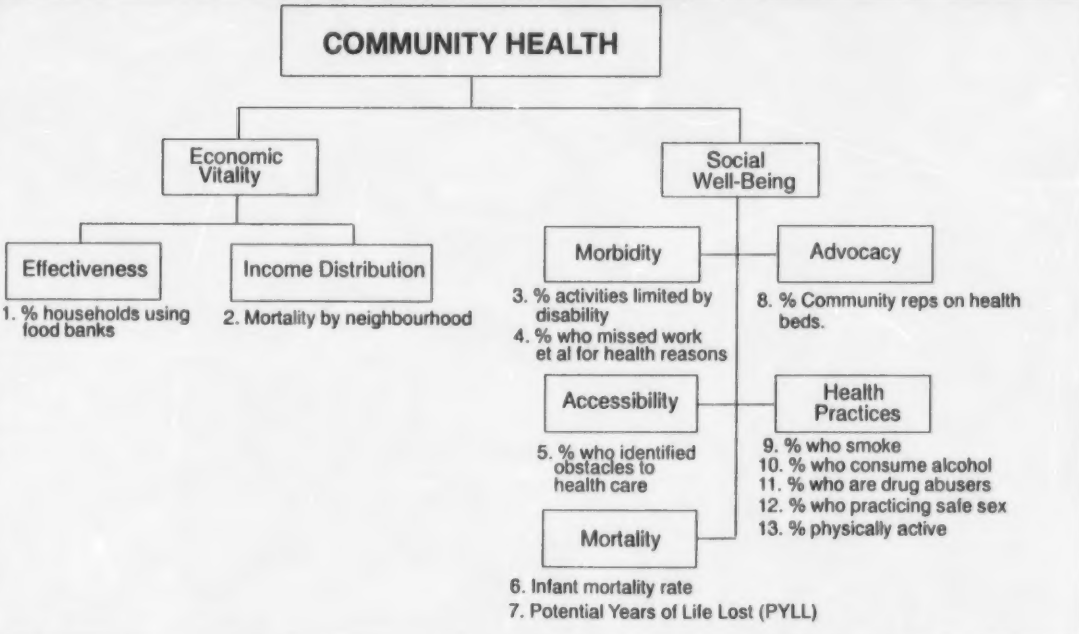
COMMUNITY HEALTH
Economic Vitality
Social Well-Being
Effectiveness
Income Distribution
Morbidity
Advocacy
Accessibility
Health Practices
Mortality
1. % households using food banks
2. Mortality by neighbourhood
3. % activities limited by disability
4. % who missed work et al for health reasons
5. % who identified obstacles to health care
6. Infant mortality rate
7. Potential Years of Life Lost (PYLL)
8. % Community reps on health beds.
9. % who smoke
10. % who consume alcohol
11. % who are drug abusers
12. % who practicing safe sex
13. % physically active

Figure B-4,
Education, City of Toronto Perspective, July 1993

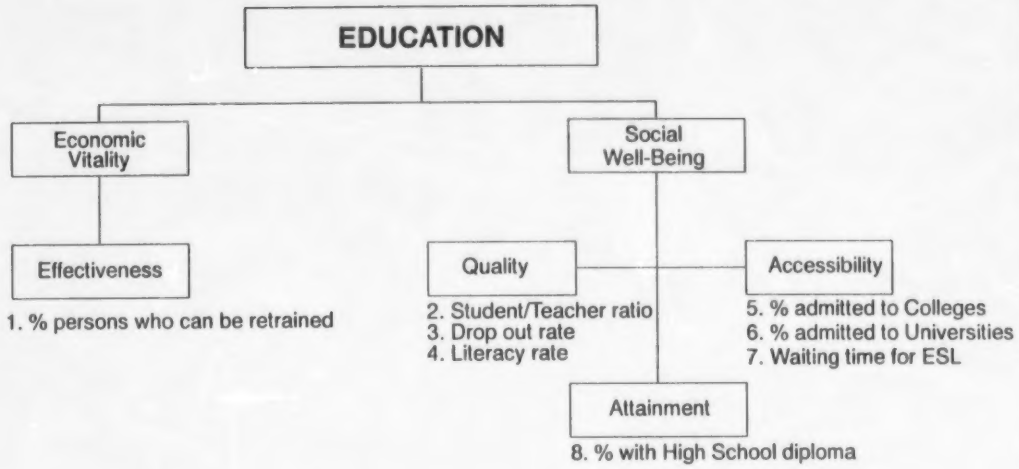

Figure B-5
Transportation, City of Toronto Perspective,July 1993

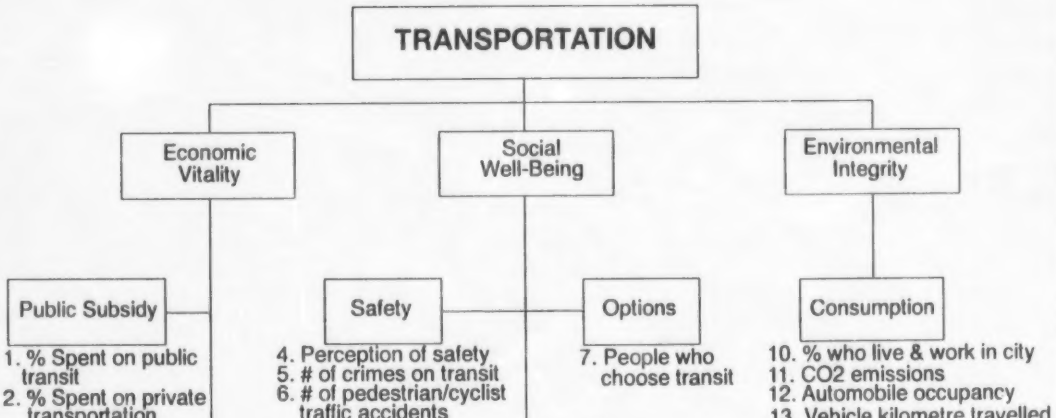

Figure B-6
Housing, City of Toronto Perspective, July 1993

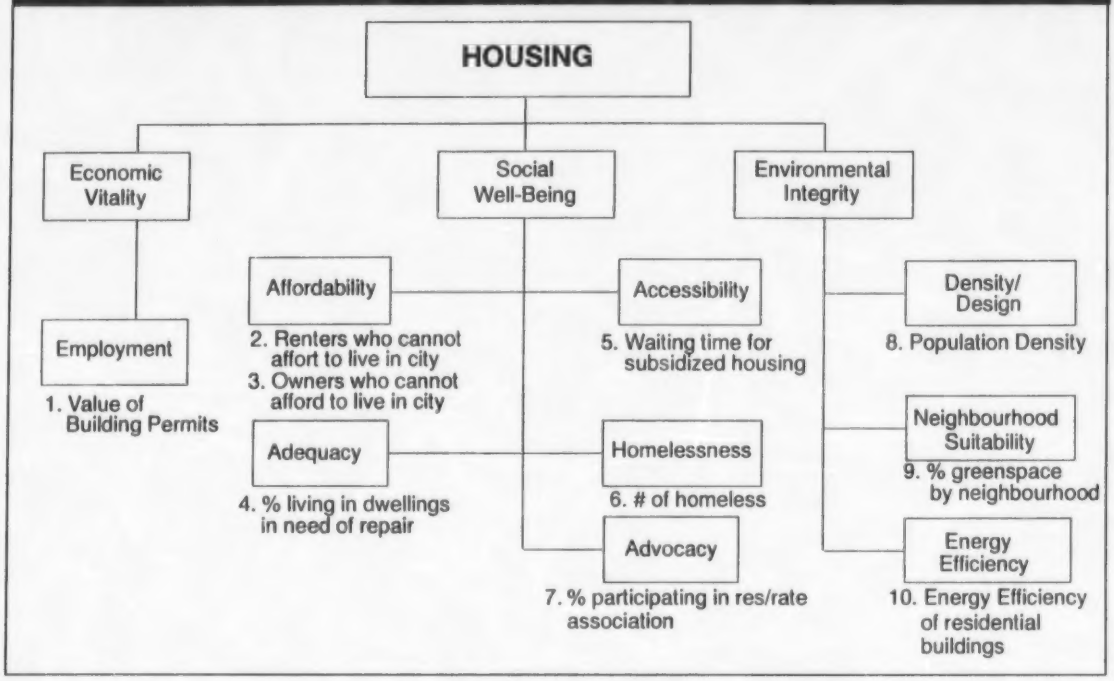

Figure B-7
Safety, City of Toronto Perspective, July 1993

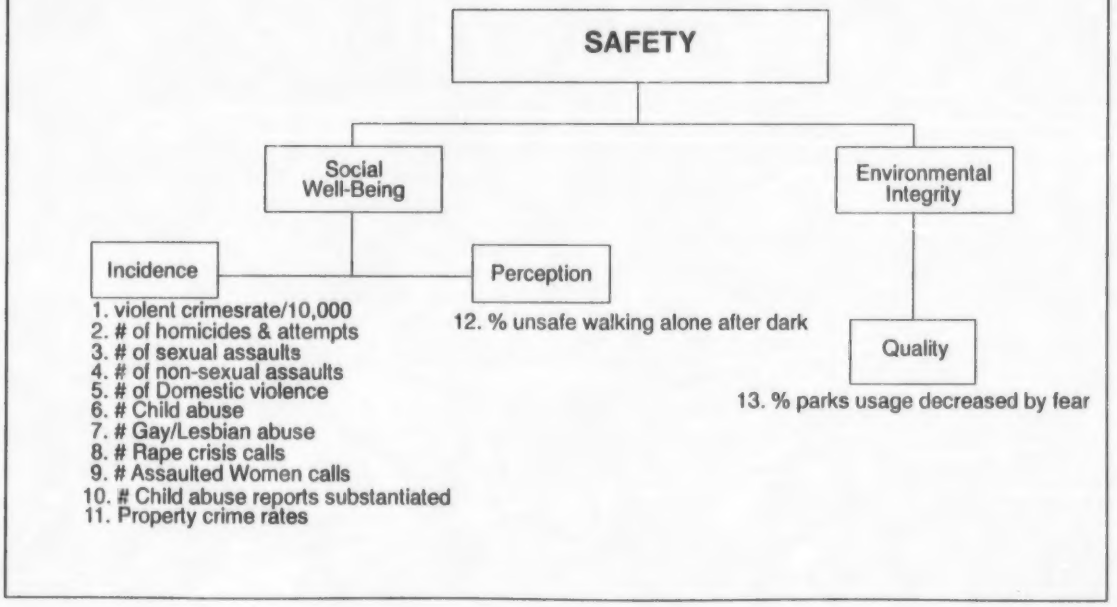

Table B-1
Economic Life

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Economic Vitality					
Employment					
1. Unemployment rate	10.1%	City	May 1993	Monthly	E
2. Percentage employed by sector:					
Manufacturing	6%	City	1991	Annual	E
Retail	8.5%				
Office	57%				
Institutions	14%				
Service	11.4%				
Other	3%				
Cost of living					
3. Cost of living index:	N/A	CMA	May 1993	Quarterly	E
Toronto	1.3%				
CMA	increase				
Business activity					
4. Office vacancy rate	20%	City	June 1992	Monthly	E
5. Percentage of total tax revenue which is collected:					
Realty tax	92.93%	City	1992	Annual	E
Business tax	90.98%	City	1992	Annual	
Employment equity					
6. Percentage of the labour force which is unionized	31.7%	Ontario	1990	Annual	E
Social Well-Being					
Income equity					
7. Incidence of low income	see map in SOCR	City	1986	5 years	E
8. Number of welfare cases	172,060	Metro	July 1992	Monthly	E
9. Length of time on welfare	N/A	Metro			D

Source:

1. Statscan.
2. .Municipality of Metropolitan Toronto, Planning Department. *Metro Employment Survey.*
3. Statscan.
4. Royal LePage Office Leasing Guide.
5. City Of Toronto, Finance Department.
6. Statscan.
7. Statscan 1986 census. Data from 1991 census will be available in the fall of 1993.
8. Municipality of Metropolitan Toronto, Community Services Department.
9. Municipality of Metropolitan Toronto, Community Services Department.

Comments:

2. Also available for Census tract, Metro or Central Area.
3. The City of Toronto is considered to be less affordable for living than its surrounding area. The data should, therefore, be available for the City and the CMA so that a comparison can be made.
5. Provides an indicator of how well businesses are operating.
7. Map shows the extent to which low income is concentrated in particular areas of the City.
9. No precise calculation yet, however, with new reforms, there will be attempt to quantify this better.

Table B-1 cont'd
Economic Life

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Environmental Integrity					
Energy conservation					
10. Commercial energy consumption per year	N/A				D
11. Kilograms of waste per capita per year from commercial sector	2.24Kg	Metro	1990	Annual	E
12. Commercial water consumption	1 million gallons per year	City		Annual	E

Source:

11. Municipality of Metropolitan Toronto,Works Department.
12. City of Toronto, Department of Public Works and the Environment.

Comments:

10. Data for this indicator will be available as part of the Urban CO_2 project in which the City is participating through the International Council for Local Environmental Initiatives.
12. Figure is approximate.

Table B-2
Environment

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Economic Vitality					
Employment					
1. Number of Green jobs		GTA			N/A
Social Well-Being					
Perception					
2. Percentage who perceive pollution as a priority	58%	City	1992	Unknown	E (but expensive)
Environmental Integrity					
Quality					
3. Number of days Air Quality Index > 31:					
Downtown	14	Immediate	1991	Annual	E
West end	32	Area	1991	Annual	E
4. Number of restricted fish species	6	Lake Ontario	1991	Annual	E
5. Percentage of time beach 'posted'	39%	City	1991	Annual	E
6. Indoor air quality	N/A				
7. Pesticide usage	N/A				
8. Kg of residential waste per capita per year	1.4	City	1990	Annual	E
9. Percentage waste recycled	19.3%	City	1992	Annual	E

Source:

1. Coalition for a Green Economic Recovery.
1. Ministry of Natural Resources.
2. Canada Health Monitor, survey 8.
3. Ontario Ministry of the Environment. *Air Quality in Ontario 1991.*
4. Ontario Ministry of the Environment. *Guide to Eating Ontario Sport Fish 1991.*
5. City of Toronto, *Department of Public Health.*
8. Municipality of Metropolitan Toronto, Works Department.
9. City of Toronto, Department of Public Works and the Environment.

Comments:

1. With more time for this pilot test, this data could have been obtained as estimates are being calculated by the sources cited.
2. This information was purchased for the State of the City Report. No commitments have been made to continued monitoring of this measure.
3. AQI does not include volatile organic compounds.
4. Includes fish restricted at various sizes, for consumption by children and pregnant women.
5. Based on fecal coliform count of 100 coliform per 100ml water.
6. An indicator of indoor air quality is very much needed.
7. An indication of pesticide usage by the City is possible, however, it would be more relevant to develop an indicator of overall pesticide usage in Toronto.
9. This figure represents landfill diversion. As more items are recycled, this percentage should increase.

Table B-2 cont'd
Environment

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Environmental Integrity cont'd					
Resource Consumption					
10. Litres of water per day per person	710	City	1991	Annual	E
11. Total energy consumption	149 Pjoules	City	1988	Annual	E
Conservation					
12. Green space per capita	0.003 acres	City	1991	Ongoing	E

Source:

10. City of Toronto, Department of Public Works and the Environment.
11. City of Toronto, Department of Public Works and the Environment.
12. City of Toronto, Department of Parks and Recreation.

Table B-3
Community Health

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Economic Vitality					
Effectiveness					
1. Number of households receiving food assistance per month	27,000	City	1992	Ongoing	E
Income distribution					
2. Mortality rate by neighbourhood		City	1984-1988	Annual	E
Social Well-Being					
Morbidity					
3. Percentage of population whose activity is limited by disability	11%	City	1988	One-time	E
4. Percentage of population who missed work/school/acitivity for health reasons	62%	City	1988	One-time	E
Accessibility					
5. Percentage of people who identify obstacles to obtaining health care	N/A				

Source:

1. Daily Bread Food Bank.
2. City of Toronto, Department of Public Health.

3. & 4. City of Toronto, Department of Public Health 1988 *Toronto Community Health Survey.*

Comments:

1. This data represents those receiving food assistance through emergency food hampers each month. It may therefore exclude those receiving food assistance from shelters, hostels and soup kitchens, or supplemental breakfast programs for children.
2. This data is most useful when compared with incidence of low income by neighbourhood.
2. Data is collapsed over four years because numbers are fairly small.
3. Refers to activity limitation because of a long term physical condition or health problem.

3. & 4. The Toronto Community Health Survey was conducted by telephone using Random Digit Dialing. While efforts were made to conduct interviews in languages other than English, thus achieving fairer representation of the Toronto population, the data retains some bias. Also, there is under-representation of those most in need because a telephone survey does not include people who have no phone

5. Although this factor is recognized as an important barrier to medical and health care, it has not yet been included in the Community Health Survey.

Table B-3 cont'd
Community Health

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Social Well-Being cont'd					
Mortality					
6. Infant mortality rate	7.9	City	1989	Annual	E
7. Potential years of life lost:					
male	22,590	City	1989	Annual	E
female	9,139				
Advocacy					
8. Percentage of community representatives on health boards					D
Health practices					
9. Percentage of the population (15 yrs +) who smoke	32%	City	1988	One-time	E
10. Percentage who consume alcohol	85%	City	1988	One-time	E
11. Percentage who use illicit drugs	15%	City	1988	One-time	E
12. Percentage who practice safe sex:					
male	72%	City	1988	One-time	E
female	68%	City	1988	One-time	E
13. Percentage who are physically active	25%	City	1988	One-time	E

Source:

6. & 7. City of Toronto, Department of Public Health.

9. - 13. City of Toronto, department of Public Health. 1988 *Toronto Community Health Survey.*

Comments:

6. Infant deaths per 100 births. This data is collected for the 4 City health areas: Western = 9.1; Northern = 5.2; Downtown = 11.5; Eastern = 7.4.
7. Based on life expectancy of 70 years. This indicator gives more weight to those deaths occurring at an earlier age, however, it does not differentiate between causes of death.
8. This data could be compiled by contacting the individual hospital and health boards in the City.
10. Individuals having consumed alcohol in the previous 12 months.
13. Based on exercise index rating, which also takes into account forms of exercise not specifically related to sports and fitness, such as usual daily routine exercise.

Table B-4
Education

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Economic Vitality					
Effectiveness					
1. Percentage of persons who can be retrained with existing funds	8-10%	Metro	1991	Ongoing	E
Social Well-Being					
Quality					
2. Student/teacher ratio (high school)	14.3:1	City	1992	Annual	E
3. Drop-out rate	15.3%	Ontario	1988	Sporadic	D
4. Literacy rate < level 3	15%	City	1989	Occasional	E-D
Accessibility					
5. Percentage of applicants admitted to colleges	N/A	Ontario			
6. Percentage of applicants admitted to universities	71%	Ontario	1992	Annual	E
7. Waiting time for adult ESL courses	none	Toronto		On-going	
Attainment					
8. Percentage of population with a high school diploma	53%	Ontario	1991	5 year with annual update	E

Source:

1. Metro Labour Education Centre.
2. Toronto Board of Education.
3. Ontario Ministry of Education.
4. Movement for Literacy Needs Assessment Final Report 1992.
6. Ontario University Application Centre.
7. Toronto Board of Education.
8. Statscan. 1991 Census.

Comments:

2. Includes only the Toronto Board of Education, therefore does not give an estimate for all schools in the City of Toronto. All schools can be obtained from Ministry of Education with some difficulty.
4. 15% have level 1 or 2 reading skill level. Level 1 means that people have difficulty dealing with printed material, and they most likely identify themselves as people who cannot read. At level 2, people can use printed materials only for limited purposes such as finding a familiar word in a simple text. They would likely recognize themselves as having difficulties with common reading materials.
5. Data not currently available, however, it will be available from the Ontario Ministry of Colleges and Universities beginning in the fall of 1993.
6. 71% are students admitted directly from high school. Admittance rate for others, which includes adults and foreign students is 33%.
7. No delays are experienced, however, there are other barriers such as cost of transportation and lack of accessible childcare which may inhibit participation in ESL courses.

Table B-5
Housing

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Economic Vitality					
Employment					
1. Value of building permits:					
Residential	$154.2M	City	1992	Annual	E
Mixed-use	$61.4M	City	1992	Annual	E
Social Well-Being					
Affordability					
2. Renters who cannot afford to live in the City	69,000	City	1991	Occasional	D
3. Owners who cannot afford to live in the City	146,000	City	1991	Occasional	D
Adequacy					
4. Percentage of dwellings in need of major repair	6.9%	CMA	1991	Annual	E
Accessibility					
5. Waiting time for subsidized housing	12,000	City	1992	Continuous	E
Homelessness					
6. Number of homeless people	25,000 to 50,000	City	1992	Occasional	D

Source:

1. City of Toronto, Department of Buildings and Inspections.
2. & 3. City of Toronto, Planning and Development Department *CityPlan '91 Background Report #15: Toward a Housing Needs Assessment.*
4. Statistics Canada #93-314. 1991 Census.
5. City of Toronto, Housing Department.

Comments:

1. The value of the building permits provides an indicator of the amount of employment which is created through the housing industry.
2. & 3. Affordable housing is defined as housing that is affordable to households which are in the lowest 60% of income distribution for tenant households of various size and composition in the Toronto area.
4. Data would be desirable at the City level as there are likely notable differences between the City and the CMA.
5. Data is for Cityhome — the City of Toronto non-profit housing company only. It would be possible with more time to obtain data for all subsidized housing in Toronto including co-ops and Metro Toronto Housing Authority buildings in the City.
6. Experience from the U.S. Census of 1990 suggests that homeless people continue to be seriously under-counted. The count is dependent on the definition of homelessness. The United Nations definition of homelessness includes people who live on the streets, and people who live in housing which does not include: access to safe water and sanitation, security of tenure and personal safety, and which is not affordable or within reach of employment, education and health care.

Table B-5 cont'd
Housing

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Social Well-Being cont'd					
Advocacy					
7. Percentage of households participating in residents or rate payers associations	N/A	City			D
Environmental Integrity					
Density/Design					
8. Population density	6540.3/KM^2	City	1991	5 years	E
Neighbourhood suitability					
9. N/A					
Energy Efficiency					
10. Heat loss of residential building					N/A

Source:

6. City of Toronto, Department of Public Health.
8. Statistics Canada Census of Canada.
10. City of Toronto, Department of Public Works and the Environment.

Comments:

7. This information is being compiled and will likely be available in the future.
8. Density varies across the City, and considerably across the region.
9. The development of suitable measures is necessary.
10. A survey of heat loss (walls & windows) will be conducted as part of a study during 1994. It is expected that an indicator for this measure will be produced.

Table B-6
Transportation

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Economic vitality					
Public subsidy for transportation					
1. Percentage of public expenditure on public transit	40%	Metro	1992	Annual	D
2. Percentage of public expenditure on private transportation					N/A
Congestion					
3. Vehicles entering the Central Area/day by mode:		Central Area of the City	1991	Biennial	
Cars and taxis	704,704				
Buses and streetcars	7,308				
Trucks	92,119				
Bicycles	29,099				
Total	833,230				
Safety					
4. Percentage who perceive that public transit is unsafe	N/A	Metro	1992	Annual	E
5. Number of violent crimes on public transit	762	Metro	1992	Annual	E
6. Percentage of total traffic injuries to:					
cyclists	12.5%	City	1991	Annual	E
pedestrians	17%	City	1991	Annual	E

Source:

1. & 2. Toronto Transit Commission.

3. City of Toronto, Department of Public Works and the Environment.

4. & 5. Toronto Transit Commission.

6. City of Toronto, Department of Public Works and the Environment.

Comments:

1. & 2. An indicator of the extent to which public transit and private transportation are subsidized by the taxpayer.

1. & 2. Currently, there is data only on the percentage of the TTC operating budget not paid for through revenues. More appropriate would be all public transit budgets in the GTA, together with a comparable figure for private transportation which would include cost of road maintenance, cost of automobile registration administration, and cost of externalities. A report on the costs of the car was done in 1991 by Pollution Probe, and methods used could be refined for future application.

3. A measure of the number of vehicles which are travelling around the downtown area. Includes only vehicles which cross the Central Area Cordon.
Also an indicator of the road space inequities between different modes of transportation.

4. Question 26C from the TTC public attitude survey. Asks to rate safety of transit on scale of 1-5.

5. Statistics for other types of crimes are also available.

Table B-6 cont'd
Transportation

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Social Well-Being					
Options					
7. Percentage of people who choose transit over car	54%	Metro	1989	Annual	E
Equity					
8. Modal split into the Central Area:					
Cars and taxis	956,183	Central Area of the City	1991	Biennial	E
Buses and streetcars	149,283				
Subway	644,304				
Go Train	73,558				
Trucks	101,331				
Bicycles	29,099				
Total	1,953,758				
9. Percentage of Wheeltrans trips responded to	92.7%	Metro	1991	Annual	E
Environmental Integrity					
Consumption					
10. Percentage of people who live and work in the City		City			
11. Carbon dioxide emissions from transportation	1.8 million tonnes	City	1988	Annual	E
12. Automobile occupancy rate	1.26	Central Area	1991	Biennial	E
13. Vehicle kilometres travelled	36 million	Metro	1991	Estimate	D

Source:

7. Toronto Transit Commission.
8. City of Toronto, department of Public Works and the Environment.
9. Toronto Transit Commission.
10. City of Toronto, Planning and Development Department.
11. City of Toronto, Department of Public Works and the Environment.
12. City of Toronto, Department of Public Works and the Environment.
13. Municipality of Metropolitan Toronto, Planning Department.

Comments:

7. Telephone survey of a sample of Metro residents. Correlates access to a car with travel choice.
   This information may no longer be collected as part of the survey.
9. May not be the best indicator of the accessibility of the public transit system for people with disabilities.
13. Rough estimate based on results of cordon count. A better estimate is being developed.

Table B-7
Safety and Security

Measure	Data	Geographic Level	Year	Frequency	Ease of Collection
Social Well-Being					
Incidence					
1. Violent crime rate per 10,000 people	134.6	Metro	1990	Annual	E
2. Homicides and attempts	187	Metro	1991	Annual	E
3. Number of non-sexual assaults	24,538	Metro	1991	Annual	E
4. Number of sexual assaults					
5. Incidents of domestic violence reported to police	3,841	Metro	1991	Annual	E
6. Incidents of child abuse reported to police	3,293	Metro	1992	Annual	E
7. Number of reports of lesbian and gay bashing to 519 Church Street	131	Unknown	90-91	Annual	E
8. Number of calls to Toronto Rape Crisis Centre per year	10,000	Unknown		Annual	E
9. Number of calls to Assaulted Womens' Helpline	9,164	Unknown	1991	Annual	E
10. Child Abuse reports to CAS, CCAS, and JFCS	1,500	Unknown	1990	Annual	E
11. Number of property crimes	5,602	Metro	1991	Annual	E
Perception					
12. Percentage of people who feel safe walking alone after dark	37%	Metro	1991	Annual	E
Quality					
13. Percentage who decreased park usage because of fear		City	1991	One-time	E

Source:

1 - 6 and 11. Metropolitan Toronto Police department.
7. 519 Church Street Community Centre.
8. Toronto Rape Crisis Centre.
9. Assaulted Womens' Helpline.
10. Children's Aid Society, Catholic Children's Aid Society and Jewish Family Services.
12. Metropolitan Toronto Police Department.
13. City of Toronto, Department of Parks and Recreation.

Comments:

For many reasons, Police statistics do not always provide a complete picture of the level of safety and security in a community. It is important to rely on other sources of information such as crimes reported to community agencies and centres.

APPENDIX C

A PILOT TEST OF COMLE IN FORT MCMURRAY

The City of Fort McMurray
Development Services Department
Planning Division
June 1993

Study Area

The study area for the Pilot Test of Quality of Life Indicators — Fort McMurray consisted of the whole of the municipality.

The City of Fort McMurray is located 450 km northeast of Edmonton, Alberta (see figure C-2). The city's population, as of the 1991 federal census, is 34,706. Fort McMurray has a young population with only 4 percent of the residents over 55 years of age. The largest employers in the area are the resource-based oil sands plants operated by Suncrude Canada Ltd. and Suncor Inc. Oil Sands Group which produce 15 percent of Canada's oil supply. The total workforce of the two companies is 6,880 as of June 1993.

The community has attempted to diversify its economy to include tourism and forest-based industries. Tourism adds about $20 million to the regional economy. Forestry has recently become more prominent due to the development of the Alberta Pacific pulp mill near Athabasca (which is one of Canada's largest) 219 km south of Fort McMurray and the refurbishing of a lumber mill in Janvier 119 km south of the city.

Over the years, Fort McMurray, which reached city status in 1980, has evolved from a "boom" town image in the early 1970's with large population shifts to an established regional centre with many more of its residents staying for longer periods of time, raising families and in some cases retiring in the community. The city has evolved itself in a number of initiatives including Healthy Cities, Winter cities and Safe Cities.

Study Team

The study team consisted of two (2) people within the City's Planning Division. Both people worked on the study for about 30 to 40% of their time due to other responsibilities within the Planning Division (equivalent of approximately 1 person full-time for 1 month). These responsibilities included day-to-day development activities, subdivision review, report preparation and the organization of Environment Week activities.

The City also formed partnerships with major industries and organizations to assist in data collections.

Study Methodology

The results of our research were influenced by the following factors:

- study time limits;
- first time involvement in Quality of Life analysis;
- staff time available to allocate to the study;
- budgetary constrains.

The methodology used for the study was very straight forward. Our approach from the outset was to use the "Community Model of the Local Environment" (COMLE) as outlined in the CMHC publication "Modeling Quality of Life Indicators in Canada: A Feasibility Analysis" and attempted to collect information relating to all indicators identified in the Model at minimal cost.

Data Availability

Initially we had hoped to use 1991 federal census data long with data from our 1989 municipal census and recent data provided by city departments and our partners in this project. We felt that this would provide the most current and accurate picture of the city.

Unfortunately, much of the 1991 census information has not been published and will not be available until September 1993. As a result, we are using data collected between 1986 and 1993. This has resulted in a somewhat skewed picture of the city in terms of current conditions, in particular, employment and commerce.

Our data collection was further constrained by the manner in which it is broken down by provincial and federal agencies. some information utilized (e.g., suicide and mortality rates, cost of living index) was only available on a provincial and not a local scale. Other data was available only on a regional basis and not in the format prescribed in the Model. Finally, we found obtaining information regarding welfare and welfare expenditures difficult to obtain due to the confidentiality of the information.

We were, however, pleased with the amount of information we were able to collect in such a short time frame. For the indicators on Housing, Land Use, Transportation, Natural Environment, Recreation and Crime and Safety, we were able to

collect 100% of the data required. For the remaining indicators, we were not as successful, but were able to collect 73% for Employment and Commerce, 67% for Health, 92% for Education and 60% for Social Welfare.

In general, the data we were unable to collect was either not available specifically for Fort McMurray, not available in the format suggested by the Model, or not available due to the reluctance of the information source to provide it.

Results

The results of the research undertaken in connection with the Pilot Test are shown in the tables at the end of this Appendix.

Conclusions

In general we found the exercise to be both stimulation as well as frustrating. Undertaking the research enabled us to gather a great deal of information relevant to our General Municipal Plan update which is underway. The research also identified certain factors which we found of interest and will likely investigate further:

- a relatively large waiting list for subsidized housing within the city;
- a low percentage of ridership on city transit;
- the relatively high percentage of land used for institutional purposes;
- the low net change in the number of business establishments considering current economic conditions;
- the high amount of solid waste generated by the community;
- the relatively low drop out rate for schools;
- the limited emphasis on long term health care;
- the large percentage of students in french immersion;
- the high number of recreational activities available.

The research also identified shortcomings in our current information base.

The frustrations in undertaking the research related to such things as:

1. Limited staff time available due to other day-to-day responsibilities, particularly with respect to reviewing and verifying the data. The project was more work than initially anticipated and was a late addition to our 1993 work programme.
2. Limited fiscal resources restricting specific research requests of Statistics Canada and Employment and Immigration. Some information required special computer runs which, in our opinion, were quite costly.
3. The format of some of the data available from Statistics Canada and Employment and Immigration (i.e., the scale of the data at provincial or regional levels only).

It is our opinion that most smaller municipalities will likely find similar problems.

With specific regard to the COMLE Model itself, we would conclude that:

- the Model is reasonably practical to use, however:

  - in the case of many small municipalities (i.e., 10,000 population or less) the applicability of the Model may be reduced in that:

  - the financial and human resources of these municipalities would limit their research capabilities;

  - the amount of readily available information pertaining to the indicators identified in the Model and specific to a particular smaller municipality may be limited;

  - the number of adjustments which might have to be made to the indicators to reflect the limited information available for small municipalities could considerably reduce the effectiveness of the Model.

- The data collected in regard to the Model should relate to a specific time period that coincides with the publication of census information in order for the Model to most accurately reflect the conditions within the community at a specific time relative to outside factors and to make the most of the data without excessive costs. For example, the research work should have been done when more 1991 census data is published, i.e., September 1993. This would perhaps be more reflective of current economic conditions.

- Certain data relative to local social and economic conditions, (i.e., age distribution, population growth, divorce, single parent families, income vs. equity, community groups and community volunteer involvement, municipal debt, tax base, consumer debt) should perhaps be added as specific indicators. For example, some of our more informal information sources have suggested that there is a very high number of dysfunctional families within the city due to higher divorce and separation rates and incidents of two income families. These sources have also suggested a higher than average consumer debt within the city. Other sources indicate an extremely high volunteer rate in connection with community activities.
- With the possible exception of small urban and rural municipalities where a large percentage of the information required by the COMLE Model may not be available and aside from the initial start up costs, the Model over the long term would in our view be reasonably affordable. Like any information system, however, the data gathering should be done at regular intervals not only to keep the information relevant and help identify trends but also to minimize the costs of using the Model.
- Generally speaking the Model does deal with relevant information, however, we did find that some of the questions asked were somewhat vague in terms of the responses required. For example, under Crime and Safety the question relating to range and scope of public safety services raised the question of whether or not the answer should be simply in terms of quantity, (i.e., number of personnel, vehicles, etc.) or should the answer be more descriptive and include some qualitative values. As a result, we would suggest that perhaps a glossary of terms should be provided with the Model to ensure some consistency in data collected by the users.
- For the most part, however, the questions were fairly straightforward.
- As noted earlier, however, some of the questions asked required adjustments to reflect the format of information available. For example, under Employment and Commerce, the information available from Statistics Canada did not provide a 15 years and over breakdown for labour force participation. It only simply provided the rate for ages 25 years plus.
- We also noted that some information such as birth rates, mortality rates and cost of living index were only available on a provincial scale and therefore may not necessarily be relevant to our city given its younger population and relative isolation.
- Given the adequate time and consideration, the Model, in particular the specific indicators, can certainly be adapted to local conditions and the availability of data. However, too much adaptation resulting from the limited availability of information, as may be the case in smaller urban and rural municipalities, could seriously affect the usefulness and applicability of the Model.
- We feel that the Model supplements and is not a substitute for qualitative or additional surveys. Public input is and will always be the major source of determining quality of life in the community. The Model will, however, help by providing a focus on some of the issues which should perhaps be discussed.
- To some extent the Model does provide a measure of the community's quality of life but as noted other specific indicators may be required (i.e. divorce rates, municipal finances, consumer debt, volunteer rates) combined with public input to provide a realistic measure.
- Without these other measures the Model perhaps provides more of a measure of the "quality of the city" as opposed to the quality of "life" within the city.
- On its own the Model would not be useful in providing direction in terms of developing official plans, strategic plans and budget. In conjunction with input from the public and elected officials it will certainly provide a good basis from which to develop plans, budgets, and programmes. For example, the city may wish to reconsider its approach to the transit system given the low ridership and

perhaps to begin to look at providing more subsidized housing as well.

- Despite the amount of quantitative information provided by the COMLE Model or any other model for that matter it is unlikely that decision making at the political level will be affected. It would seem from our experience that political decision making at all levels, but particularly so at the smaller municipal level is make more on the basis of a "feel" for the community as opposed to the analysis of statistical information.

- Although we recognize that the COMLE Model is not intended to be used as a tool for rating or ranking communities, we do see a strong need to establish some general standards by which a community can compare or measure its particular "quality of life". We also see the need for a regular schedule of updating the various indicators within the Model in order for a community to measure changes and act accordingly to help maintain an improved quality of life.

Data Source

The sources of data included:

- Alberta Education
- City of Fort McMurray - 1989 Municipal Census
- City of Fort McMurray (all departments)
- City of Fort McMurray Computer Based Land Information System
- Disaster Services Committee
- Fort McMurray Business Directory and Survey
- Fort McMurray Catholic Schools
- Fort McMurray Housing Authority
- Fort McMurray Paper Recycling Group
- Fort McMurray Public Schools
- Fort McMurray Real Estate Board
- Fort McMurray Regional Hospital
- Regional Air Quality Coordinating Committee and Alberta Environmental Protection
- Royal Canadian Mounted Police (Local Detachment)
- Statistics Canada - 1986 Census
- Statistics Canada - 1991 Census
- Suncor Inc. Oil Sands Group
- Syncrude Canada Ltd.
- Workmen's Compensation Board

Figure C-1
Study Area National Location

Figure C-2
Study Area Provincial Location

Figure C-3
Study Area

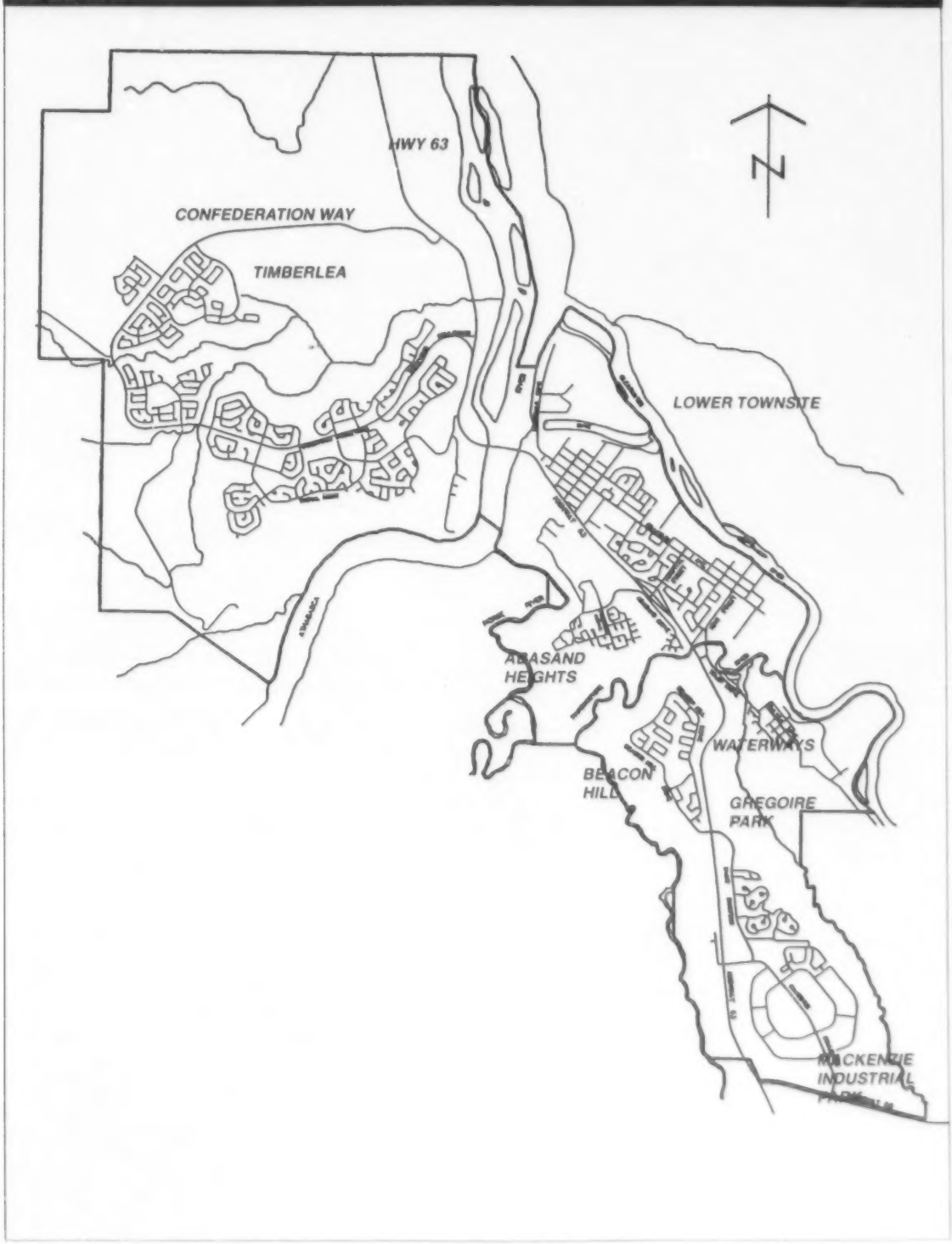

Table C-1
Pilot Test Quality of Life Indicators for the City of Fort McMurray

ITEM	STATISTIC	BASE YEAR	SOURCE
Housing			
New Housing Units constructed per annum	19	1992	Fort McMurray Development Serivces
Value of Building Permits Average Value Per Capita	$61.56p/c	1992	Fort McMurray Planning Based on 1991
% Tenants whose gross rent exceeds 30% of current income	5.4%	1986	Stastics Canada
% Owner occupiers whose housing expenditures exceed 30% of income	4.6%	1986	Statistics Canada 1986 Census
Average price of serviced residential lot	$35,000	1993	Alberta Municipal Affairs[1]
Average number of persons per room for men and women	0.5	1986	Statistics Canada 1986 Census
% of dwellings in major need of repairs	30%[2]	1993	Fort McMurray Building Inspections Estimate
Waiting time for those in need	# on waiting list -100 Existing stock FMHA[3] -161 units AMA[4] - 60 units 3-month waiting	1993	Fort McMurray Housing Authority
Population density per sq.km in residential areas	617.4	1986	Statistics Canada 1986 Census
Density gradient	1.2 to 12.5 pp ha	1993	Fort McMurray Planning Division
Average lot size	451.95m^2	1991	Fort McMurray Planning Division
Average cost of serviced commercial and industrial lots	55.000/ac	1993	Fort McMurray Planning Division
Average lot levy	Variable depending on servicing needs. Not easy to determine average	1993	Fort McMurray Planning Division
Average distance to green space within City	300m	1993	Fort McMurray Planning Division
Land Use			
Spatial differences in distance to green/ park space	0 to 500	1993	Fort McMurray Planning Division
% of households within 1 km of playground Elementary school Local Services	94%	1993	Fort McMurray Planning Division
No. and acres of park and recreation areas per capita	5/1000 2 Acres/1000	1993	Fort McMurray Parks Division
Average block length	328m	1993	Fort McMurray Planning Division
Index of land use mix	Res. 16.3% Ind. 3.4% Comm. 24.2% Institut: 36.6% Open Space: 19.5%	1993	Fort McMurray Planning Division

Notes:
1. The majority of residential lands within the city are owned and developed by the Government of Alberta
2. Regulations refurnace operations account for high repair percentage
3. FMHA - Fort McMurray Housing Authority
4. AMA - Alberta Municipal Affairs

Table C-1 cont'd
Pilot Test Quality of Life Indicators for the City of Fort McMurray

ITEM	STATISTIC	BASE YEAR	SOURCE
Land Use (cont'd)			
Mix of building ages dwellings only	25 yrs. - 1.5% 15-25 yrs. - 98.5% 5 yrs. - 26.4%	1986	Statistics Canada
# Dwelling per hectare	1.8D/ha	1993	Fort McMurray Planning Division
Amount of vacant serviced commercial and industrial land	Ind. 77.42 ha	1993	Fort McMurray Planning Division
Average time for approval of building permits	20 days	1993	Fort McMurray Building Inspections
Transportation			
% of public expenditure allocated to public transit including infrastructure (not including common infrastructure)	1.2%	1993	Fort McMurray Engineering Services
Expenditure for street maintenance per capita	$988.30	1993	Fort McMurray Engineering Services
% of population living and working in City	53%	1989	Fort McMurray Census 1989
Distance or travel time to transit	Average 400m	1993	Fort McMurray Engineering Department
% Street km served by public transit	60%	1993	"
Public transit for disabled	Nil		"
# Crimes on public transit	66	1993	"
Motor Vehicle registrations per capita	1.6	1989	Fort McMurray Census 1989
% Population using public transit	8.5%	1993	Fort MuMurray Engineering Services
Natural Environment			
Particulate matter suspended in air [1]	.07 (COH units)	1992	Ab. Environmental Protection
Concentration of atmospheric			
NO_2 (average annual reading)	.09/ppm	1992	Ab. Environmental Protection
SO_2 (average annual reading)	.006/ppm	1992	Ab. Environmental Protection
CO_2	N/A		
Water quality	see attached table	1993	Fort McMurray Utilities Division
Kilos of waste/person/year	770.15kg/year	1992	Fort McMurray Utilities Division
Volume of city waste generated by industrial sectors[2]	19,000 tonnes/year	1992	Fort McMurray Utilities Division
% City waste recycled and marketed[3]	used batteries 2,500/year	1992	Fort McMurray Utilities Division
	used oil 200,000 l/yr	1992	Fort McMurray Utilities Division
	newspaper & other paper 500 tonnes year	1993	Community paper Recycling Programme
% Land retained in "natural" state	54%	1993	Fort McMurray Planning Division

Notes:
1. Particulate matter suspended in air not available, coefficient of haze used instead
2. Includes commercial and industrial waste
3. Percentage of city waste recycled not available

Table C-1 cont'd
Pilot Test Quality of Life Indicators for the City of Fort McMurray

ITEM	STATISTIC	BASE YEAR	SOURCE
Employment/Commerce			
Federal and Provincial investment in Municipality	N/A		
Household Wealth	N/A		
Incidence of low income: economic families unattached individuals	 5.1% 20.2%	 1986	 Statistics Canada 1986 Census
Unemployment rate	6.0%	1991	Statistics Canada 1991 Census (Economic Region 880)
Average annual income	30.700	1989	Statistics Canada Small Administration Data
Total # job openings in local neighbourhood	N/A	1991	Employment & Immigration Canada (Fort McMurray Office)
% Available skilled semi-skilled, unskilled jobs vacant	N/A		
% Available clerical - sales, managerial or professional job vacant	N/A		
Cost of living index	1.5%	1991	Statistics Canada 1991 Census (Alberta)
Retail sales per employee	N/A		
Net change in # of business establishments	3	1993	Employment & Immigration Canada (Fort McMurray Office)
# of Retail trade establishments per capita	9/1000	1993	City of Fort McMurray Business Directory/Survey
Department stores per capita	0.12/1000	1993	Fort McMurray Planning Divsion
Shopping Malls per city	5	1993	Fort McMurray Planning Divsion
% Labour force age 15+ employed in 8 major sectors			
Primary industries (A, B, C & D)	32.5%	1986	Statistics Canada 1986 Census
Manufacturing (E)	2.3%		
Construction (F)	9.1%		
Transportation storage, communications and other utilities (G & H)	3.9%		
Trade (I & J)	13.9%		
Finance Insurance and Real estate (K & L)	3.7%		
Government Services (N)	4.7%		
Other service industries (M, O, P, Q and R)	27.7%		
Labour force participation rate minorities	N/A		
Labour force participation - rate for persons 15-24 years	89.1	1986	Statistics Canada 1986 Census
Female labour force participants rate for persons 25 years +	83.3	1986	

N/A = Not available for Fort McMurray

Table C-1 cont'd
Pilot Test Quality of Life Indicators for the City of Fort McMurray

ITEM	STATISTIC	BASE YEAR	SOURCE
Employment/Commerce (cont'd)			
Female labour force participants rate for persons 25 years and over	67.4	1986	
Male labour force participants rate for persons 25 years +	90.8	1986	
Male labour force participants rate for persons 25 years or over	N/A	1989	
% Jobs that are full time	86.14	1989	Fort McMurray Municipal Census 1989
% Labour force unionized	34.7	1991	Statistics Canada 1986 Census
Female umemployment rate	9.1	1986	Statistics Canada 1986 Census
Male unemployment rate	12.1	1986	Statistics Canada 1986 Census
Youth unemployment rate 15 - 24 years	10.7	1986	Statistics Canada 1986 Census
Health			
# Hospital beds per capita	4/1000	1993	Fort McMurray Regional Hospital
% Acute and chronic care hospital beds per capita	00% acute 4/100	1993	Fort McMurray Regional Hospital
# Physicians per capita	1/1000	1993	Fort McMurray Regional Hospital
# Community care centres or beds per capita	0	1993	Fort McMurray Regional Hospital
# Public health workers per capita	2.6/1000	1993	Fort McMurray Health Unit & Mental Health Clinic
Infant mortality rate	N/A		
Age adjusted mortality rates for men and women	N/A		
# School boards (Public & Separate)	2	1993	Fort McMurray Public Schools Fort McMurray Catholic Schools
# Private Schools	2	1993	Provincial Ministry of Education
% and kind supplementary education services			
Public Schools	N/A	-	Fort McMurray Public Schools
Suicide rate	N/A		
Workers Compensation claims	484	1992	Workmen's Compensaton Board
Education			
Student/teacher ratios: primary, secondary levels			

N/A = Not available for Fort McMurray

Table C-1 cont'd
Pilot Test Quality of Life Indicators for the City of Fort McMurray

ITEM	STATISTIC	BASE YEAR	SOURCE
Education Con't			
Public Schools			
primary	18.5/1	1993	Fort McMurray Public Schools
secondary	21.5/1	1993	Fort McMurray Public Schools
Catholic schools:			
primary & secondary	18.2/1	1992	Fort McMurray Catholic Schools
Expenditure on education by school board			
Public Schools			
education	$19,090,000	1992	Fort McMurray Public Schools
total expenditures	$33,235,000		
Catholic Schools			
education	$15,142,636	1992	Fort McMurray Catholic Schools
total expenditures	$25,560,7090	1992	
High school drop-out rate			
Public Schools	6%	1991-92	Fort McMurray Public Schools
Catholic Schools	9.2%	1993	Fort McMurray Catholic Schools
# Primary, secondary schools			
Primary			
Public Schools	10	1993	Fort McMurray Public Schools
Catholic Schools	7	1993	Fort McMurray Catholic Schools
Secondary			
Public Schools	2	1993	Fort McMurray Public Schools
Catholic Schools	1	1993	Fort McMurray Catholic Schools
# School boards (Public & Separate)	2	1993	Fort McMurray Public Schools Fort McMurray Catholic Schools
# Private Schools	2	1993	Provincial Ministry of Education
% and kind supplementary educational services			
Public Schools	N/A	-	Fort McMurray Public Schools
Catholic Schools			
home schooling	.3%	1993	Fort McMurray Catholic Schools
Youth Assessment Centre	.4%	1993	Fort McMurray Catholic Schools
cooperative education	1.0%	1993	Fort McMurray Catholic Schools
total	1.7%	1993	Fort McMurray Catholic Schools
% Students in special education			
Public Schools	3.5%	1993	Fort McMurray Public Schools
Catholic Schools	1.2%	1993	Fort McMurray Catholic Schools
% Students in french immersion			
Public Schools	9.39%	1993	Fort McMurray Public Schools
Catholic Schools	13.90%	1993	Fort McMurray Catholic Schools

N/A = Not available for Fort McMurray

Table C-1 cont'd
Pilot Test Quality of Life Indicators for the City of Fort McMurray

ITEM	STATISTIC	BASE YEAR	SOURCE
Education Con't			
% Population 15 yrears + high school diploma	32.8%	1986	Statistics Canada, 1986 Census
% Population age 15 years + with university degree	8.7%	1986	Statistics Canada, 1986 Census
% Population age 15 years + with college certificate	24.4%	1986	Statistics Canada, 1986 Census
Recreation			
Per capita expenditure on parks and recreation	$139.16	1993	Fort McMurray Parks Division
Swimming pools/capita	.5/10,000	1993	Fort McMurray Recreation & Culture Division
Tennis Courts/capita	.7/10,000	1993	Fort McMurray Recreation & Culture Division
# Arenas/capita	.9/10,000	1993	Fort McMurray Recreation & Culture Division
# Curling rinks/capita	.2/10,000	1993	Fort McMurray Recreation & Culture Division
# Golf courses/capita	.5/10,000	1993	Fort McMurray Recreation & Culture Division
# Game seats/capita	800/10,000	1993	Fort McMurray Fire Department
# Neighbourhood bars/capita	3/10,000	1993	Business Directory & Survey
# Bowling alleys & amusement places	4	1993	Business Directory & Survey
# Bingo halls	2	1993	Business Directory & Survey
# Theatres & movie theatres/capita	1/10,000	1993	Business Directory & Survey
Restaurants	60	1993	Business Directory & Survey
Shopping malls by type			Business Directory & Survey
Regional	1	1993	Business Directory & Survey
Community	4	1993	Business Directory & Survey
Neighbourhoood	10	1993	Business Directory & Survey
# Sports & leasure clubs/capita	20/10,000	1993	Fort McMurray Recreation & Culture Division
# Youth clubs/pop. 16-19	3/10,000	1993	Fort McMurray Recreation & Culture Division
# Social clubs/capita	.5/10,000	1993	Fort McMurray Recreation & Culture Division
# Library books/capita	1.88	1993	Fort McMurray Public Library
# Museums & art galleries/capita	.5/10,000	1993	Business Directory & Survey
# Symphony orchestras/opera[1] and dance companies	7	1993	Fort McMurray Recreation & Culture Division
# and hectares parks & recreation areas/capita	300 hectares 9/1,000	1993	Fort McMurray Parks Division
Crime and Safety			
Government expenditure on policing/capita (operating)	$111.00	1992	RCM Police "K" Division
Local government expenditure on fire protection/capita	$134.86	1992	Fort McMurray Fire Department
# Police officers/capita	1/1,000	1992	RCM Police (Fort McMurray)

N/A = Not available for Fort McMurray

Table C-1 cont'd
Pilot Test Quality of Life Indicators for the City of Fort McMurray

ITEM	STATISTIC	BASE YEAR	SOURCE
Crime and Safety (cont'd)			
Fire employees/capita	2/1,000	1992	Fort McMurray Fire Department
Fire protection classification of community	4	1986	Fort McMurray Fire Department
N/A = Not available for Fort McMurray			
Fire & Ambulance - maintains fire safety, emergency, medical services and fire supression in area	-	1993	Fire & Emergency Services
Hall #1 1 x 1040 igpm pumper 1 x 840 igpm aerial ladder 1 x 1 ton rescue 2 x ambulance			
Hall #2 1 x 1750 igpm pumper 1 x 840 igpm pumper 1 x 625 igpm pumper E911 communications fire prevention			
Hall #3 1 x 1,1500 igpm pumper 2 x ambulance			
Policing - to keep the peace and prevent crime	-	1993	RCM Police (Fort McMurray)
Police motor vehicles: 17 assigned to municipality 10 assigned to province (includes boat and 2 ski-doos)			
Bylaw Services - provides enforcement of all bylaws within the muncipality	-	1993	City of Fort McMurray
Inspection Serivces - administer and enforce provincial and municipal legislation related to building inspection	-	1993	City of Fort McMurray
Development Services - administer and enforce provincial and municipal legislation related to development	-	1993	City of Fort McMurray
Disaster Services Comittee representatives from: City Oil sands plants Improvement District #18 Alberta Safety Services Fort McKay to provide "on-call" emergency response and site services to committee members' organizations	-	1993	Disaster Services Committee

Table C-1 cont'd
Pilot Test Quality of Life Indicators for the City of Fort McMurray

ITEM	STATISTIC	BASE YEAR	SOURCE
Crime and Safety (cont'd)			
Regional Air Quality Coordinating Committee - provides a mechanism to allow the public, senior government and industry to address regional air quality issues. Includes:	-	1993	Regional Air Quality Coordinating Committee
Provincial government Fort McKay Oil sands plants Public			
Traffic accidents/capita	19/1,000	1992	RCM Police (Fort McMurray)
Crime against persons (violent crime rate)	604	1992	RCM Police (Fort McMurray)
Total break and enter	228	1992	RCM Police (Fort McMurray)
Total property crime	1,718	1992	RCM Police (Fort McMurray)
Criminal code offenses	4,700	1992	RCM Police (Fort McMurray)
Drug investigations	333	1992	RCM Police (Fort McMurray)
Provincial investigations (includes investigations of intoxicated persons and Liquor Act offenses	2,190	1992	RCM Police (Fort McMurray)
Collisions	652	1992	RCM Police (Fort McMurray)
Traffic investigations	7,214	1992	RCM Police (Fort McMurray)
Average annual fire Losses: total dollars/capita		1992	
property	$847,567 $24.42/capita	1992	Fort McMurray Fire Department
injuries	9	1992 1992	Fort McMurray Fire Department
deaths	0		
Social Welfare			
Average weekly unemployment rate	N/A		
# Welfare cases	N/A		
Annual expenditure on welfare	N/A	1993	Fort McMurray Planning Division
# Social service agencies per capita	1.2/1000	1993	Fort McMurray Planning Division
# Range and scope of social agencies in City	44 AIDS support to family assistance programs		

Notes:

1. Amateur and semi-professional only. There are no professional symphony orchestras/opera or dance companies in the community.